Supplement to The Builder,

MAY 17, 1884.

GENERAL CONFERENCE OF ARCHITECTS.

WE this week conclude our very full report of the proceedings of the Seventh General Conference of Architects, held in London last week, and to which we have already devoted a supplement and some other pages.

On Thursday, the 8th inst., visits were paid to the new Church of the Oratory, Brompton; to the new Central Technical College at South Kensington; and to Stafford House and some other West-end mansions. In the evening the President and Council received the members and their guests at a *Conversazione* in the South Kensington Museum. Notices of these several gatherings will be found on another page.

On Friday, the 9th inst., the Conference Fifth Meeting was held, Mr. Arthur Cates in the chair, when

Mr. R. Phené Spiers, Master of the Architectural School at the Royal Academy, read a paper

ON THE FRENCH DIPLÔME D'ARCHITECTE AND THE GERMAN SYSTEM OF ARCHITECTURAL EDUCATION.

THE communication which I have been asked to make on the French architectural diploma and on German architectural education is the outcome of a discussion which took place at the Royal Institute of British Architects on February 4th this year, after the reading of a paper by Mr. William H. White, the subject being "A brief Review of the Education and Position of Architects in France since the year 1671." This paper, and the discussion which followed it, have been fully reported in the first half of the "Transactions" of the Institute for the present session, just published.*

The latest regulations for the courses of study of the École des Beaux-Arts, and the qualifications for the *Diplôme d'Architecte*, are fully set forth in the *Journal Officiel de la République Française* of October 10th, 1883. I propose now to give a summary only of these, but would suggest that a translation in full ought to appear in the Institute "Transactions" for reference. I have further obtained information from various sources as to the working of the Diploma, and a list of the subjects for design given since its establishment in 1869. The summary I propose giving will be in some measure the complement of the remarks I made in the discussion following Mr. White's paper, when I confined myself chiefly to a description of an *atelier* and the working out of the designs therein under the advice of the Principal or *Patron*. As the *Diplôme* examinations can be passed only by those who have obtained certain *valeurs* or marks in the first class or upper division of the École des Beaux-Arts, I am obliged to describe the curriculum of the obligatory courses of study there before specifying those referring to the *Diplôme* alone.

The École des Beaux Arts affords gratuitous instruction to all comers, whether Frenchmen or belonging to other nations, between the ages of fifteen and thirty, on condition of their passing an examination. This examination takes place twice a year, in March and in July, and is divided into two sections; the first consisting of a drawing from the cast (either ornament or head of figure) made in the school in eight hours; of a model in clay of an ornament in bas-relief, also in eight hours; and of an architectural design to be executed from a programme given at the time in twelve hours. Those only who satisfy the examiners as to the first test can pass on to the second, which consists—1st, Of a written examination in arithmetic, algebra (including quadratics and logarithms) and geometry; 2nd, an oral examination in the same; 3rd, an examination in descriptive geometry; 4th, a written examination in history, followed by an oral examination in the same. Those who pass this second test become students of the second class of the school, and are placed according to the number of marks received in the examination.

The course of study in the second class consists of—1st, *Concours d'Architecture*, or competitions in architectural design; 2nd, *Concours* in construction, mathematics, &c.; 3rd, drawing from the ornamental cast, modelling from the cast (bas-relief only), and drawing from the antique figure. The first, or *Concours d'Architecture*, consists each year of the following courses:—

a. Six studies of the orders or portions of the same to a large scale shaded in Indian ink. (In explanation of these studies I may note that it was found that many of the students entered the school with very little knowledge of the ancient styles of architecture, and very little power of drawing them; to remedy these defects the new regulations require drawings of detail to a large scale, shaded in Indian ink, such drawings including studies of the orders, and of sundry details, as doorways, windows, cornices, &c. This obliges the student to be a good draughtsman, and to have some acquaintance with ancient architectural styles before he attempts to design.)

b. Six complete designs (plans, elevations, and section), the original sketch being made in the school in twelve hours, and retained by the authorities. Before being allowed to compete in this course, at least two mentions must be obtained in the first course (analytical studies).

c. Six sketch designs finished in colours and made in the school in twelve hours.

d. Two studies in ancient architectural styles, the programme for which is set by the Professor of History.

The second series of studies consists of:—

a. A course of lectures in mathematics and mechanics, followed by an examination partly written and partly oral.

b. A course of lectures on descriptive geometry.

c. A course of lectures on stereotomy, surveying, and levelling.

d. A course of lectures on perspective.

These three courses are accompanied by the requirement to make a certain number of *épreuves* or drawings in the atelier, illustrating the course, and followed in each case by an *épreuve* or drawing made in the school *en loge* in twelve hours, and by an oral examination; and lastly,—

e. A course of lectures in construction, followed (at intervals during the year) by studies in stone, wood, and iron construction, sketches for which are made in the school in twelve hours, followed by a complete set of drawings in each subject, done in the *atelier* in fourteen days, and one "*concours de construction générale*," in which the working-drawings for a building are worked out with specification complete as if it were going to be constructed, three months being allowed to make the drawings in, the original design being made in the school in twelve hours. A *vivâ-voce* examination of every student is held in explanation of the drawings submitted in each of the above *concours*.

The third series of studies consists of drawings from the plaster-cast of ornament, modelling in bas-relief from the cast, and drawing of the antique figure. Twelve hours is given for the execution of any one drawing or model, done at the student's leisure, and not necessarily in one, two, or three sittings. At least two of each of these are required to obtain the medal or *mention* necessary for passing to the first class, and the Professor of Drawing decides when the drawings or models are good enough to be submitted to the jury.

The courses of study thus cited take about three years to go through; that is to say, that an average student giving all his time can obtain a sufficient number of marks or *valeurs* in three years to enter the upper school.

The *recompenses* given are:—

For the *Concours d'Eléments Analytiques* (studies of the Orders), half-mentions.

Projets rendus (finished drawings), whole and half-mentions.

Esquisses (sketch designs), half-mentions.

Mathematics, descriptive geometry, stereotomy, and perspective, third medals and mentions in each.

For construction, first, second, and third medals and mentions.

For drawing of ornament, antique-figure, for modelling, and for studies of history, third medals and mentions.

The values of these recompenses in second class are:—Half or second mentions, 1 *valeur*; 1st mention, 2 *valeurs*; 3rd medal, 3 *valeurs*; 2nd medal, 4 *valeurs*; 1st medal, 5 *valeurs*.

To enter the upper school it is necessary to have obtained six *valeurs* in architectural design, medals or mentions in mathematics, descriptive geometry, stereotomy, construction, and perspective; a medal or mention in drawing of ornament, modelling, and drawing of the figure.

In the first class of the school in each year the courses of study consist of:—

Six competitions in Architectural Design,—finished drawings (*projets rendus*).

Six competitions in Architectural Design,—sketches design only (*esquisse-esquisse*).

One competition of Composition in Ornament. (Done in the school in seven days.)

Two competitions of Design in Architecture reproducing a style selected by the Professor. (The sketches for which are done in twelve hours *en loge* and the drawings made in ten days in the *atelier*.)

Two competitions in Drawing from the Figure. (Twelve hours each.)

Two competitions in Modelling of Ornament. (Two hours each.)

The recompenses are:—

For architectural design, finished drawings,—1st medals, 2nd medals, and 1st mentions.

For architectural design, sketches, — 2nd medals and 2nd mentions.

For ornament and design in selected styles,—1st medals, 2nd medals, and 1st mentions.

For drawing of figure and modelling,—1st medals, 2nd medals, and 2nd mentions.

The values of these recompenses in the first class are different from those in the second, and are:—1st medal equals three *valeurs*, 2nd medal equals two *valeurs*, 1st mention equals one *valeur*, and 2nd mention equals a half *valeur*. Besides these are the *valeurs* accorded to those who take part in the great competition for the *Grand Prix* described in Mr. White's paper, viz., being among the ten selected, two *valeurs* or marks, and in addition the following:—

First-Second *Grand Prix*, four *valeurs* or marks; second-second *Grand Prix*, three *valeurs* or marks; mention, two *valeurs* or marks.

After these preliminary explanations, I am able to come to the immediate purpose of my communication, viz., the examination required for the *Diplôme d'Architecte*. The first examination was held in 1862, when five candidates passed; but it was not until 1869 that the formal decree of the Government instituting it was passed. No examination was held in 1871 (the year of the war), or in 1873, 1874, and 1875,—no candidates, I suppose, having presented themselves.

Up to the present time ninety-four candidates have obtained the Diploma,—by far the greater number being in the last four years.

* Some account of it was given in the *Builder* for Feb. 9 last.

The subjects given have been as follows:—

Programme of Subjects of Designs for Candidates for the Diplôme d'Architecte since its institution by the "Ecole Nationale et Spéciale des Beaux Arts":—

1869. A Town Mansion.
1870. An Academy of Music.
1872. Salle des Pas Perdus, or Great Hall of a Palace of Justice (Law Courts).
1876. A Residence for Three Artists: a Painter, a Sculptor, and an Architect.
1877. A Laboratory of Natural History on the Sea-Coast.
1878. Four small Residences for a Tourist: one in Switzerland, one in England, one in Spain, and one in Italy.
1879. A Carriage and Foot-passenger Passage through a Palace.
1880. A Hall for the Public Meetings of the Institut National de France.
1881. A Municipal Library for a large Provincial Town of France.
1882. A House for the Société Centrale des Architectes, Paris.
1883. A Concert Hall for a large Provincial Town.

The examination is held once every year. No student can present himself as a candidate who has not obtained nine *valeurs*, or marks, in the first class of the school, either in architectural design, composition of ornament, or in the competition for ornament for the *Grand Prix*, and one mark in architectural history.

The subject for design consists of a building or portion of a building, worked out with plans, elevations, sections, working drawings, details full size, and specification complete, as if the building were to be carried out, with a *devis estimatif*, or schedule of quantities, of one trade. Six months are given to work it out, the original sketch being made in the school. On the submission of the designs the candidates are required to pass an oral examination before their drawings on the various details there shown, the theory and practice of their construction, the qualities and defects of the materials employed, their strength and stability; as also an oral examination on the history of architecture,—on the elements of physics and chemistry applied to construction,—on building legislation,—and on the system of accounts.

The judges consist of,—The Director of the School and the Secretary (M. Albert Lenoir) of the School; three professors of the school *ateliers;* three professors of the external *ateliers;* the professors of Construction, of the History of Architecture, of the Theory of Architecture, of Physics and Chemistry, and of Building Legislation; two members of the School Council; an *Inspecteur-général* of Historic Monuments; an *Inspecteur-général* of Ecclesiastical Buildings (*édifices diocesains*); and an *Inspecteur-général* of Public Works,—the last three nominated by the Government; eighteen members in all.

I am inclined to believe that the standard required to obtain the *Diplôme d'Architecte* is much too high, and in this idea I am supported by one or two French architects whose opinions I have asked. It means six or seven years' serious study in Paris, and the provincial architect is not able always to afford so long a period; nor does his position or remuneration as "Architecte du Département" require a call for so searching an examination or multiplied preliminaries.

I have occupied so much of your time in my description of the French *Diplôme d'Architecte* that I must curtail the remainder of my communication to you respecting the German schools. So many years also have passed since I examined in detail the working of the schools of Berlin, Munich, Vienna, and Stuttgart, that I may not be giving you the latest developments. The papers of the examinations held in Berlin for the degrees of *Bauführer* (building inspector) and *Baumeister* (architect) are published in our Transactions of 1859-60, and will show you the very high standard (much too high, I think, in mathematics) required there. I will only, therefore, explain generally the system of education in the above capitals of Germany and Austria.

In Germany, or rather in Prussia, the student comes from the university or school with a good knowledge of geometrical drawing, of drawing from the cast, and of mathematics and physics. He first enters the office of an architect for one year, where he picks up what he can, as in England. He does not pay anything, his knowledge of drawing and of descriptive geometry placing him in a position to be able to render assistance of value in return for the privilege of working there. He has then to pass a slight examination, and studies in the architectural school for two years. His attention there is turned to all the theoretical and practical points of the profession. He copies drawings made by well-known architects,—if at Berlin, chiefly Schinkel's and Stüler's,—and divides the time between making these copies and the composition of original designs (which are, of course, more or less *adaptations* of what he has learned in copying). He attends lectures on Physics, Mathematics, Construction, Ventilation and Warming, Sanitary Science, and the principles and practice of estimating and *writing* Specifications. At the end of the second year he passes an examination, and takes the title of *Bauführer* or inspector (if he fails to pass he continues his studies). If he aims at a higher position he obtains an appointment on some Government building as an inspector or clerk (receiving a nominal salary) for three years, and then enters the school again in the first class to study for two years more, the studies being a very advanced kind: at the end of that time he passes an examination as *Baumeister* (literally "master of building"), and he then becomes a Government architect, or practises on his own account. At Munich and Stuttgart, the capitals of Bavaria and Wurtemburg, the practice still obtains, I believe, of studying one year in an architect's office before entering the Architectural or Polytechnic schools, as they are called. Two or three years are spent in the school, followed by examinations; I am not aware whether the examination is recognised by the Governments of those countries.

In Germany generally architects and engineers study together in the same school,—in France, architects, painters, and sculptors.

In Vienna architects have their special academy; there are Classic and Gothic professors, with their respective *ateliers* or studios,—in many cases the student passes from one to the other. There are complete courses of lectures, competitions in design, and examinations held at the end of each term, as in an English university or school. In 1863, or thereabouts, a new system of study was introduced which is worth notice. The senior students of the school, about twenty in number, make an excursion with their professor twice or three times in the year for a period of a fortnight or three weeks. They take up one or two important buildings and measure them, taking plans, sections, elevations, and details (very similar to the work done in some of the series of excursions organised and carried out by the late Mr. Edmund Sharpe with the members of the Association). About 5*l.* is allowed to each student by the Government, and his drawings become the property of the Academy. On returning to the school in Vienna, these drawings are worked out to a large scale, traced in lithographic ink, and reproduced, each student having a copy. Alternately with the making of these drawings they work out designs of their own, and naturally these designs are inspired with that feeling which they have imbibed when measuring and drawing the ancient edifices of the country.

So many years are spent in the German schools in training that comparatively few of the students make a Continental tour. In Vienna during one or two years after leaving the Academy, the Austrian student travels through North Italy, and when the Quadrilateral was in their possession special facilities were afforded for the careful delineation of the finest works of the Italian Gothic and Renaissance styles. The superiority of modern architecture in Vienna to that in Germany generally I attribute to these Continental studies.

Before quitting the subject of foreign education, it will be interesting to note that in Spain, throughout the length and breadth of the land, no one can practise as an architect who has not received the diploma of the Architectural School of Madrid. Except that the examination which follows after three or more years' studies in the school is preceded by a serious test in mathematics and physics, I am unable to give you further information.

May I venture to trespass a few minutes more to draw a parallel between English and foreign architectural training? The first great failing in England is that the student coming straight from school is not prepared to make that use of the practical training to be had in the office which is universally assumed. He has little or no knowledge of freehand or geometrical drawing, of physics, mechanics, or of any of the elements of architectural style; he flounders about, therefore, in the sometimes styleless design of the architect in whose office he may be placed, and acquires by the longest possible process a certain knowledge of a mixture of style and no style, second-hand: his powers of reasoning in design, as a rule, are not brought into play until his articles are terminated, and then want of time and absolute lack of training at once curtail his ideas and cramp his imagination. He has picked up an idea here and there in the office, and numerous details, but he finds himself unable to grasp the composition of a building of any size. In many cases he has never had an opportunity of visiting or studying any one of the buildings the drawings of which he has been continually at work on; and, therefore, supposing he has been thinking for himself, has never seen the results of his thoughts and inquiries (this observation applies more to London than to provincial students). He has, in fact, taken from *three to five years* to learn *imperfectly* what might have been learned in *one or two* if his mind had been *previously properly trained* to receive it.

If we turn now to France, we find that foundation of knowledge laid which is wanting in England. Before the student enters any office, his hand is trained to draw freehand in the primary schools, and his mind developed with a knowledge of applied mathematics and descriptive geometry. He enters an *atelier*, and the elements of style are learned in the École des Beaux Arts. Architectural drawing is carried to a high standard. Original designs are worked out, interspersed with instruction in construction of various kinds, and all the sciences cognate to architecture. The student works not so much in rivalry with his fellows as in *atelier* against *atelier*. This rivalry of the studios, which I described in the discussion following Mr. White's paper, is the most important feature in French architectural education. The isolated effort of one individual in rivalry with another may,—nay, must,—continually fail, because the development of style is not, and never can be, worked out entirely by one man. An original genius suggests a theory, a second carries it a little further, by numerous others it is taken up, till at last this new idea becomes an established fact. A number of men working in one *atelier* form a school in friendly rivalry against others. Each student in it exerts himself to his utmost. The senior students advise the juniors in the study of their designs. The junior students in return work for the senior students, and acquire knowledge of style by so doing. The energies of both are brought into play, and this unison of feeling,—this mutual co-operation,—enables the student to acquire great knowledge of style, rapidity of execution, and a serious study of design in a short time. In this we find the secret of the success of the French school, so far as it goes. Where, then, does it fail? It fails because a studio or *atelier* is not an office where work to be executed is drawn out, or a *chantier* where it is being carried out. Those students whose means necessitate their working for their living whilst their studies are continued from time to time at the school do acquire that practical training which fits them for their vocation, and the most prosperous architects in the present day in France (and by prosperous I mean not those highest in rank, but who are the most sought after by clients), are not, as a rule, the past *Grand Prix*-men, but those who commenced their practical training at an earlier period of their existence. On the other hand, it must not be forgotten that the high standard of design which exists in France is due to those architects who, in one sense, have sacrificed themselves and their prosperity (so far as a large income is concerned) by continuing their studies till they had obtained the *Grand Prix*, and then devoting four years more to research and study in Italy and Greece. The important changes which have in late years been effected in the École des Beaux Arts show that the Government is fully alive to the defects in its system of education, and the practical character given to the Diplôme d'Architecte may bring about an important change in the architecture of French buildings.

In Berlin this want of practical training is avoided by the student being obliged to study for one year in an architect's office before entering the school, and (if he aspires to the rank of *Baumeister*) by the spending of three years as inspector or clerk on Government buildings before he passes to his second and superior training in the school. Compared, however, with French education, the German fails in art because he is linked with the

engineer instead of with the painter or sculptor, and, further, by working in one *atelier* (viz. the school) and under one set of professors, the rivalry lies between student and student, and not between *atelier* and *atelier*. Add to this that the custom (whether it continues or not I do not know) of copying eternally the designs of Schinkel, his ceilings, staircases, cornices, &c., cramps the German architectural mind, and prevents its emancipation into a freer line of thought and imagination.

Of late years in England an immense progress has been made, due chiefly to two causes:—1st. The great development of the practice of drawing and measuring ancient buildings encouraged by the rewards of the Institute, of the Architectural Association, and of the Royal Academy, and the subsequent reproduction of such drawings in the Architectural Association Sketch Book and other publications, and in the professional journals; and, 2nd, the extraordinary enterprise shown in the publication of drawings of actual modern buildings and of competition designs in the professional journals of the day. Where all of them have been doing their best to supply a demand, it would be invidious to name specially any one of them, but there can be no doubt that the immense development and freedom of architectural design during the last ten years in England, and the rapid advance in draughtsmanship, is more or less due to the placing within the means of the poorest student a series of illustrations of the latest developments of architectural style. Two other educational sources must here be noted:—1st, The meetings and classes of the Architectural Association, a society unique in its character, existing in no other country and in no other profession; and, 2ndly, the Royal Academy, which, for obvious reasons, I should have refrained from mentioning, were it not to pay tribute to the services of those members of the Academy who, in late years as visitors, have given the students the advantage of their experience and of those other qualifications which have brought them among the elect. And here I venture to take this opportunity of rendering a personal tribute to the memory of one of our greatest artists whose loss we still deplore, the late Mr. George Edmund Street. The long experience I have had of architectural training enables me to judge, perhaps better than any one else, of the extraordinary value of the services which Mr. Street rendered in the Architectural School of the Royal Academy. The rapidity and range of his grasp of such subjects of design as were being worked out by the students, the wonderful fertility and originality of his mind, and the peculiarly happy way in which he (accepting the scheme of the student's work) turned it from bad into good architecture, and in a few minutes gave him the benefit of forty years' experience, promised to lay the foundation of a school of architectural designers in this country which would have left its mark in the architecture of this last quarter of the nineteenth century. His career as visitor in the Architectural School was, alas! too short, but the influence of his work remains with us; and among those who, in addition to his advice in the Academy, received their architectural training in his office, there are some who have already taken a foremost place in the profession, and others who are, I trust, destined to do so.

The Chairman (Mr. Arthur Cates) said he had listened with the greatest interest to the exceedingly able paper which Mr. Spiers had read. It dealt with a subject the importance of which it was hardly possible to over-estimate. Upon the education of the young architect depended the future of the profession and the honour of this country in the development of the art. It was much to be regretted that many of those young men now coming forward should be in charge of members of the profession who received large premiums for what was too often only the run of the office. Mr. Spiers ably represented architectural education in England, but he had also considerable knowledge and experience of Continental systems. It was to be regretted, therefore, that so large a number of the leading members of the profession, who should be interested in its future, should be conspicuous by their absence from that meeting. It might be that they would have the opportunity of reading and carefully studying the matter which Mr. Spiers had so well put before them, but it would have been more gratifying if they had put aside even pressing engagements to attend and favour the Conference and the world at large with their opinions as to the future prospects of architectural education. Mr. Spiers had dwelt upon the system prevailing in France, with the *patron*, the *atelier*, and the confraternity of students, assisted by the course of study drawn up by the École des Beaux Arts. A corner-stone had been given to this by the establishment of the diploma, the possession of which was a certain guarantee that the holder had passed through a course of serious study, and had a sound basis of knowledge, not only as a draughtsman, but in all the arts and sciences which were cognate and affiliated to architecture. The contrast between this and the English system was striking, and the only redeeming feature on the part of the English system appeared to be the Architectural School of the Royal Academy, of which Mr. Spiers was the honoured master. He could not speak of his own knowledge of that school, but speaking from what he had heard of the experience of his own pupils, he could cordially endorse what had been said with respect to the great influence and the devoted energy which their late President, Mr. Street, exerted in improving the efficiency of the school. Nothing would render his loss more important to the profession than the fact that at the moment when he died he was developing in the Architectural School of the Royal Academy, with the assistance of Mr. Spiers, a system of education likely to bring forward the abilities and skill of the young men in a manner which had never been attained to in England before. All honour, therefore, to Mr. Street, and they could only hope that the Royal Academy would continue to give Mr. Spiers every assistance in developing the system so well begun. He had been much struck with Mr. Burnet's drawings which were displayed on the walls. He might incidentally mention that he was exceedingly surprised to find that Mr. William H. White, the secretary of the Institute and the editor of its "Transactions," had found it necessary to append an explanation to the word "stereotomy" in the discussion on his paper, which was referred to by Mr. Spiers. That one instance was sufficient intimation of the views which Mr. White held as to the want of knowledge of the architectural students in this country. As regarded the French studio or *atelier* system, in the case of Mr. Burnet they had a very happy instance of the advantages to be derived from the course of study which he had undergone at the École des Beaux Arts. Mr. Burnet was the son of their much esteemed friend, Mr. John Burnet, of Glasgow. At an early age he had had an opportunity of showing in an excellent manner the advantages he had derived. His natural ability had been developed and guided by his course of studies at the École, and those who visited Glasgow could hardly receive a greater pleasure than by inspecting a work by him, the entrance to the Fine Arts Gallery in Sauchiehall-street.* This was an excellent and admirable work, not only complete in all its parts, but showing the great advantages derived from such a course of study as Mr. Spiers had indicated. Mr. Spiers had shown that in this country the profession had no satisfactory preparation for office-work. Tracing was the ordinary work of the office, without any particular guide. The only guide which the young man had was the competition for the prizes and medals offered by the Institute and the Association, which, after all, only affected a comparatively small class. That class really did not so much need the inducement, as they would by their own natural abilities and industry make their mark whether those prizes were offered or not. The Examination established by the Institute had done, and would do, great good, and he hoped that one of the practical results of Mr. Spiers's paper, and of his efforts to improve architectural education, would be to enlarge the Examination and to give more force and power to it, inducing the Institute also as a body to take up firmer ground on that subject than it had hitherto done. He might incidentally refer to the course taken by kindred institutions, where they had prepared a complete syllabus of subjects covering the whole range of their profession. Such might be fairly adopted hereafter as a model for the future examinations of the Institute. With regard to the education of the architect, he might refer to the book which he had mentioned on the Tuesday evening, the report of the International Congress of Architects held in Paris in 1878, in which, under the head of *Enseignement Nationale des Architectes*, would be found a very elaborate essay on professional education. He hoped the attention of the Institute would be directed to this matter, and that it would receive more encouragement from the senior members of the profession than was evidenced by their absence from that meeting.

Mr. Lawrence Harvey said he had had experience of the German system at Zurich under Professor Semper, Zurich being considered the tip-top school at the time he studied there. Professor Semper was not unknown to the profession in England, because he had taught for some time in London. The fault of the German system was that it was really a schoolboy system, the time being cut up into lessons, so that there was no "go" in one's studies. This was not only his opinion, but it was also the opinion of Professor Semper, who was, however, forced to follow the course laid down by the Swiss authorities, and could not change it. When he (the speaker) went to Paris, he found a very different state of things. Instead of being in a big boys' school, where men from twenty-five to thirty were taught like boys of twelve, he found himself a free man without being subject to any system of school discipline. When he went to Paris he belonged to the corps of the *atelier* of M. Le Bas, one of whose pupils was M. Garnier, the architect of the Grand Opera-house, and among other pupils were some who had since risen to great eminence. The great value of the *atelier* system was that every pupil felt that his success depended largely on his own industry and application to his studies, and not only his own success, but the *prestige* of the *atelier* to which he belonged. He remembered that for one competition he worked for some three weeks until eleven o'clock at night, going back at four the next morning, while the last evening he worked all through the night. It could not be expected that a pupil in a mere school would work as hard as this; but a man who had all his initiative developed in himself would do so when prompted by the ambition of succeeding. This was the great advantage of such a school. Some years ago he travelled with his friend Mr. Charles Barry in a railway carriage, and in the course of conversation Mr. Barry asked him for his experience in the École des Beaux Arts. He told Mr. Barry that the pupils who paid the most at the *atelier* Le Bas paid 21 francs a month, and these were the pupils who were not admitted into the school. When they were admitted into the school, they paid about 15 francs; when admitted into the first-class 10 francs were paid; and any one who had received a prize, such as a medal, or something of the kind, was not asked for any money by the *chef*. Mr. Barry asked what was the motive, then, for an architect keeping an *atelier?* He told Mr. Barry that, in the first place, Frenchmen were very different from Englishmen. A Frenchman believed a good deal in doing things for the sake of "*la gloire*," and, besides, there was another motive actuating the *chef* of a large *atelier*. His position as such was one of the best steps towards getting to the highest honours France could give in architecture, namely, that of being elected an Architectural Academician and a Member of the Institute. This was just what the architects in this country could not aspire to, because the Royal Academy here had nothing to do with the profession. In fact, architects had not even the right of having an architect in the Royal Academy. Some days ago he asked himself whether the French system was really impossible in this country,—whether something of the sort could not be accomplished here. In this country we had not got into the way of giving a motive to a man to be a good master to his pupils. At the present time there was no inducement, except to keep the pupils at work making tracings and other things, while the architect pocketed the money paid by the parents and guardians. But he thought he saw his way to some remedy. In the Institute they now gave prizes for different things, and then there was the Examination for admission as an Associate. What he suggested was that at the same time that they proclaimed the name of the pupil or candidate who had succeeded in gaining a prize or in passing the Examination, they should also proclaim the name of his master. A great part of the merit

* A view of this doorway was published in the *Builder* for April 22, 1882.

of the pupil depended on his master; therefore it was an injustice that the name of the master should not be made known. If this were done, he believed they would very soon find a change for the better, and that, as in France, after a certain number of years, some one would be found to have gained the name of being a particularly good master. Le Bas's name seemed to be known all over the world, although he had done no very great work, with, perhaps, the exception of Notre Dame de Lorette. Le Bas's name had been made, however, by his being a good master. There were many men with a particular aptitude for teaching who had not got the chance of designing a great building. From the simple fact of a man having a big building all the world talked about him, whether it were a good building or not; and there was no doubt that honours were given to those people who were successful in getting big buildings. They received gold medals and were made knights, but this was merely fallacious, because a man like Christopher Wren required no "Sir" to be put before his name. He had had a good opportunity of seeing the influence which Mr. Street had over some of his pupils. He had seen the works of two young men who were pupils at the Royal Academy, which had been corrected by Mr. Street, and evidently he had inspired life into them, as would always be the case when one artist came in contact with those aspiring to high aims in art. Supposing Mr. Street had been an unknown man, but had had pupils like these, and it was found that all the pupils who took the great prizes came from Mr. Street! Though he had been an unknown man they would, under the French system, have had an opportunity of seeing that he was doing a great public service, and they would recompense him by according to him the highest honours that could possibly be given to him. He considered, therefore, it was of the utmost importance to proclaim the name of the master as well as of the successful competitor. For his own part, having seen the systems in Paris, Germany, and London, he preferred as a basis of education the London system, and he could say this without prejudice, as he had not been brought up in the metropolis. He had no prejudice in favour of any system of education, and he only gave the results of what he had seen. A man who was really an artist might be left to his own initiative, to learn in a better way than a boy cramped at his desk. It was not possible to fill a lot of pupils with knowledge just as pitchers could be filled with water: to say to them,—"Sit here and we will fill you with all the learning you want!" That would be simply making a lot of mediocrities. He did not think the *diplôme* which M. Guillaume had started in Paris would succeed. Its effect already had simply been to well-nigh kill the *atelier* system. The *atelier* system was simply the development of what they had in London. It was merely an extension of the London system, one master having fifty or sixty pupils, and taking an office next door to his own to accommodate them. But the pupils of the different men felt proud of being the pupils of their masters, just as a similar feeling imbued the minds of the old pupils of Barry, Street, or Scott. But M. Guillaume, in tempting the pupils to enter the School of Arts without paying anything, put them all into one box, and the result was that there could be no more feeling of competition or *esprit de corps*.

Professor Kerr remarked that he had intended to say very much what had been said by Mr. Harvey at the commencement of his speech. It was a remarkable thing, when they contemplated the immensely delicate organisation which was devoted to the study of architecture in France and Germany, that our English students under the English system seemed, nevertheless, to find their way with great success to distinction. We had no school except the school of the Royal Academy; for South Kensington, so far as the teaching of architecture was concerned, was simply a farce.* Those who understood the matter knew that its pretension in this direction was a disgrace to the Government, and that the public money expended upon South Kensington was shameful waste. [This statement was received with applause.] It was no doubt capable, under a better system, and by dismissing the soldiers and admitting the architects, of being made a centre of architectural instruction which would be of great benefit to the public, and tend to the reputation of the country. The way in which the student of high class obtained his knowledge of design in this country was now very simple. We could not persuade young men in this commercial country to devote so many years of their time as seemed to be devoted in France and Germany to the study of what he called Academical drawing. We took a different line. The student must begin business, and get business. However sublimated his ideas might be with respect to art, he (the speaker) had no objection to the student's ideas being of a business character. We could find occupation for all aspirations of that kind in this country with great benefit. He did not think that the system of paying large premiums was so much encouraged now as it used to be, and for his own part he should be very glad, if he lived long enough, to see it entirely abolished. He remembered one architect who had a very considerable practice in his day, and was of high reputation,—the late Mr. John Shaw, of Christ's Hospital. Mr. Shaw made it a rule never to take a penny from any pupil, but to admit into his office without any fee, and even on small salary if it were earned, any young man for whom he had a vacancy, and who displayed sufficient ability. That system was gaining ground in the case of many architects who did not take premiums. Those who were the most solicitous about premiums were the men who had the least to offer in return for them. The system of taking youths for three years, for whatever the master could get, was not to be commended. When a young man of artistic proclivities found himself in the office of an architect in the country, with a fair general practice, what did he do? He devoted himself, supposing he were a steady youth, and anxious to learn, to his master's work. Then again, he had now a peculiarly English institution for his education, and that was the illustrations in the professional journals, to which it was impossible to attach too great importance. From those drawings, which were fac-similes very often, young men were able to obtain information, instruction, advice, direction,—call it by whatever they pleased,—to a much greater extent than they could get in any School of Design according to the French and German systems. Therefore, he thought, the professional journals had the title of being the architectural academy of the country. The profession, therefore, ought to be by no means stingy in its support of that particular institution, and in its acknowledgment to those who, by their commercial enterprise, were being of great service to the education of the profession. In Mr. Spiers's very admirable classes at the Royal Academy, a young man had to go through a regular course, which was of great value. He would like to see a similar school established in connexion with the Institute, and also one forced upon South Kensington. We paid for it, and we ought to have it. It would be well to see a rivalry spring up between the Institute, the Academy, and South Kensington, which would very soon produce a good effect. The English architectural student educated himself in a way which must be called "rough and ready," and he failed in attaining that peculiar delicacy of delineation for want of this particular academical training. Therefore he hoped that amongst the other indications of progress which the Institute was presently about to afford, there might be some suggestions made as to the foundation of a school of academical architecture. If they looked, as they had to do once a year, at the drawings and designs sent in to compete for the Institute prizes, it was useless to say they were not first-class productions. They were not of the same style as the designs, exhibiting draughtsmanship of a high order, exacted by the French; but from their point of view nothing could be better than some of the drawings which were hung in that room. Therefore he for one was very much inclined to think that if they were allowed in England for the next twenty or thirty years to pursue their own course, without too much influence from abroad, they would find England at the head of all the schools of architectural design in the world. No one could look back to the last fifty years of English history in architecture without being satisfied that we were pursuing a course that would end in our ascendancy in this as in many other things.

Mr. R. Knill Freeman (Bolton-le-Moors) remarked that from what Mr. Spiers had said it seemed that the outcome of the French system was to develop the more artistic part of professional education, while the German system produced a more cast-iron development of it. Any one who had studied the professional education of the last thirty years would see that one great danger was the separation of the theory from the practice of architecture. A short time since remarks were made in the building papers as to the great difficulty which assistants experienced in meeting with adequately-paid appointments. He did not dispute that there were great hardships and difficulties, but his own impression was that in England a good man in the long run would always make his position and command his price. With regard to the question of education in this country, it had to be looked at from two points of view; they had to consider the education of the profession generally, and anything done with that in view, of course, must have its centre and principal movement in London. But in seeking to be generally advantageous they must have such appliances for the use of the students of the profession as would bring them within the reach of all. One of the great difficulties in England in any attempt to adopt the Continental system would be in the long term of residence which seemed to be required to perfect the system. In England, when a young man went into an office as a pupil, he had more than one thing to consider. In the first place, he had to consider his education; and in the next place he had to consider a certain position he might have in the district, and which he wished to keep up. The fact of being away for some years would very much shake and weaken that connexion, and he fancied that although a good education would be of great advantage, the dropping out of the minds of those amongst whom he hoped to practise would be a very great drawback. The chief movement in this matter must come from the societies, and first from the Institute. If this were so, and some arrangements made for art-education in the principal centres of the profession, by which provincial students might obtain very different privileges to those which they now possess, a great step would be made towards the object in view.

Mr. William H. White (Secretary to the Institute) corroborated what Mr. Harvey had said to the effect that when a candidate in France gained a prize, the master's name was also announced. For instance, when he lived some years ago in Paris he used to send drawings to the *Salon*, and having omitted to put the name of his master upon one, he was compelled to add the name of his London master. He held in his hand a copy of the *Gazette des Architectes*, which contained a return of the names of the gentlemen who received the Diploma in 1883, attached to each name being that of the master. From this it appeared that the master who was now the most successful with his pupils was M. André.

Mr. E. A. Grüning considered that after the careful way in which the subject had been treated in the paper, and by the speakers in the discussion, there was little to be added. He was much interested in the subject of foreign education. He had commenced his education at a very early period in Hamburg, under two well-known architects there. He was obliged to return to his country, but as a result he got a practical bit of education afterwards, viz., six months' work with his hands in the workshop. He had never ceased to feel that it was an immense advantage to be able to use his hands, and to understand how others carried out with their hands what he had designed with his head. It was a pity that more of the senior members of the profession were not present to profit by the valuable advice which had been given as to the teaching of their pupils. Professor Kerr had rather amused him by mentioning the existence of a "School of Architecture" at South Kensington. He had had many applications for assistants' berths from young men who had studied there, but not one of them seemed to know even the size of the common brick in use in London. That was an absolute fact which had occurred to him more than once. The other schools in London could not be too highly valued. A pupil had the opportunity of learning general and good practical work in the office where it was carried on, but in no case could he obtain the education to be had at such schools as that of the Royal Academy. The want of this in his (the speaker's) time was bitterly felt, but this was now well supplied under the leadership of Mr. Spiers. The value of the work done by the Architectural Association was

* We have frequently called attention to the wretched character of the architectural work, in reviewing the students' prize designs at the annual exhibitions.—Ed.

almost equally great. He saw that every day in the case of the pupils in his office, whom he tried to bring up to practical work, but whom without the assistance of these schools he would fail entirely to educate, in the proper sense of the word.

Mr. E. G. Bruton (Oxford) remarked that in his early days, Mr. Spiers, before he went to France, had the run of his (Mr. Bruton's) office. He had been much gratified with the remarks of Prof. Kerr and the other speakers. As a provincial architect, he wished some means could be adopted of allowing pupils the opportunity of passing through some such schools as had been advocated.

Mr. Woodward thought that constant visits to buildings in progress were of the utmost importance to the young architect.

Mr. Blagrove considered that, as a general rule, a pupil in the office got on rather in spite of his master than through any assistance he got from that gentleman. If the pupil, then, were asked to mention the name of his master he would too often give the name of a man who only afforded him the chance of snatching a few hours in the evening to devote to the study of design. Perhaps so many of the senior members of the profession had shown good taste in being absent from that meeting.

Mr. John Slater remarked that the whole feeling in this country was against centralisation, and against depending too much upon authority. We were so anxious and desirous of fostering and giving scope to individual genius that we very much preferred that it should run into individual eccentricity rather than be "licked into shape." Could they have had a more typical English speech than that of the learned Professor? In this country the student, unless he had some one to look after him carefully at first, did not know where to go for information. He agreed with what the Professor had said as to the excellence of the designs which were sent to the Institute, and those which appeared in the building journals. Good men, no doubt, who had a natural ability and genius, got on, in spite of everything, but they took a great deal longer to attain the knowledge required in their practice than if they had been able to make use of such means as were to be had abroad. At a previous meeting of the Conference reference was made by Mr. Cates to several French books as being the best on their respective subjects, and this showed that some incentive should be given to architectural students in this country to make themselves acquainted with other languages than their own. To a very large number of young architects these were simply sealed books. Last year the Board of Examiners made a recommendation that in the Examination there should be some questions showing the knowledge of foreign tongues possessed by the candidate. The Council, however, did not see their way to comply with the request, but he ventured to hope that the Council would yet consider whether the scope of the Examination should not be more extended. He thought that while the examination in France was rather too difficult, we at present erred on the other side.

Mr. Hugh Maclachlan said that the German system had hardly had sufficient justice done to it. The French system was pretty fairly known, but the German system came in somewhat between the French and English systems. It was, like the English system, more practical, but it did not lead to so much of that beauty of drawing produced by the French system. He questioned, however, whether the latter system led to such variety of design as was to be seen in Germany and England. The question as to which system of education was best might be tested by two points,—that which produced the best men, and that which produced the largest number of well-educated men. He was rather in favour of the latter. By the English system young men were able to learn pretty nearly everything if they applied themselves diligently. There was no doubt that many of the buildings carried out in England at the present day were a disgrace to the nation; on the other hand, there were buildings in this country which were finer perhaps than anything to be found elsewhere. Referring to the German system, he remarked that Herr Baurath Ende, in taking his pupils over different buildings, was in the habit of drawing their attention to the construction and safety of the scaffoldings and ladders.

Mr. C. Aldridge, as a provincial architect, would like to say something about pupils in the provinces. He would also like to add his meed of praise to Mr. Spiers for the able paper he had read. The difficulty was to see how best to commence the necessary reforms, and how they could be effected under the present system of pupilage. For his own part he would like to see that system altogether abolished; but something must take its place, and at present there did not seem to be any indication of what that something should be. At present parents had a notion that when their son left the office in which he had been articled, he would be at once able to place his brass-plate on his door, and make a fair income from his own practice. That idea not only affected the parents, but also the pupils themselves, for they were more or less permeated with the notion that when leaving the office of the architect to whom they were articled, they would be able to start for themselves. It was next to impossible to get them to attend classes or lectures after office hours, which they would do if they knew they had to pass a compulsory examination at the end of their term of pupilage. In Liverpool he had established classes in connexion with the Liverpool Architectural Society, somewhat on the same principle as those in connexion with the Architectural Association in London. These were more or less successful, and he then endeavoured to establish a place where lectures should be given on practical subjects. Two or three of these lectures were delivered to almost empty benches, and the result was that they were suspended. He could hardly blame the young men in this matter; they worked more or less hard in the office all day, thinking there was nothing more to be done to acquire efficiency. The architectural works of foreign countries were far superior to anything in this country, and there was a thoroughness in them not to be found here. In England much was lost by this want of system, and until there was a compulsory examination for architects, they might talk with little practical effect.

Herr Franz Baltzer (Government Baumeister, Berlin), remarked that in Germany the examinations for architects were too exacting, especially in regard to the auxiliary sciences. He believed that in course of time the German system of education would approach more and more to those of England and France.

The Chairman felt that the whole question had been so fully considered that any observations he might offer would be mere surplusage.

A hearty vote of thanks was then passed to Mr. Spiers for his able paper.

Mr. Phené Spiers, in replying on the vote, said he thanked those present for the kind way in which they had shown their appreciation of what he had done. His best reward had been in the information he had elicited, and upon which he wished to make a few remarks. His object was to bring the whole subject of professional education before them, especially as their Examinations had only been lately founded, and this was the first Conference held since their establishment. He hoped the proceedings of that Conference would have some influence on the extension of the examinations, to make them wider of application. He did not wish them to go to the same extent as foreign schools, although no doubt they ought to develop a higher standard. In running through the remarks they would see at once how that portion of his paper referring to the rivalry between studio and studio had been taken up by his friend Mr. Harvey, who spoke of the "*Atelier* Le-Bas" as producing the best architects. For himself, of course, as a pupil of M. Questel, he spoke of the "*Atelier* Questel" as being the best. When he first went to Paris to study as an architect, his father said, "Let us see first at the school whence the largest number of medallists have come," and, consequently, he went to M. Questel's *atelier*. Prior to that he was aware that M. Le-Bas was the best, but the sun of both of them having set, M. André was to the fore, and in consequence of the numerous mentions of students of his who had obtained diplomas at the examination, he had been elected as Member of the Institute. This illustrated the great value of the rival *ateliers*, which we could never hope to have here, except in a sort of indirect way. He hoped the pupils of Street and Burges in by-gone times, and of such living men as Waterhouse in the present, would take a certain pride in their schools. He knew that the pupils of Street had the greatest affection for their master, and often spoke of the advantages they had gained in his office. With regard to the new departure which had been taken in France though they had established *ateliers* in the schools, there were some outside, so that freedom was not so much lost as Mr. Harvey thought. Professor Kerr was willing to be content with our own system; but for himself, he (Mr. Spiers) was not quite inclined to acquiesce in the continuance of things as they are, for he thought we had much to learn from France and Germany. He felt certain that the most eminent men of the "Queen Anne" school were the greatest admirers of the four great architects of France,—J. L. Duc, Duban, Vaudoyer, and Labrouste. He thought that if there was any decided tendency in Classic design at present it was towards a close assimilation of modern French work. Professor Kerr had referred to the architectural school at South Kensington. The reason of its failure and the failure of other similar schools there was, that they were not established to train artists of either profession, but masters of schools, and it would take many years before they arrived at any other results under the existing system. It was only necessary to go through a course which enabled them to obtain appointments as masters to teach others, and the training in the architectural school was just sufficient to enable a man to teach the elements of construction and what was known as architectural design to others outside,—just sufficient to teach a working man when he went into the provinces. They were always obliged to get their ultimate training elsewhere. Mr. Freeman seemed content with English draughtsmanship, and thought we had a very high standard, but he did not agree with the theoretical instruction abroad. He failed, as perhaps he (the speaker) had done, in making it clear that though it was theory which was taught in the French schools, the theory which was taught was the theory of construction in its most extended branches. A French student had to go through a training in descriptive geometry and stereotomy which was quite unknown to English architects. Any one who went through that could not help reaping an advantage from it. He did not wish to suggest that such a man would have any exceptional powers. But he might remark, as an instance, that though unacquainted with practical work, when he returned to England he was working on a large building under Sir Digby Wyatt, and some of the ceilings of staircases were of complicated construction in different forms of Roman type. Though, of course, they came in very easy to him as part of the study he had gone through in France, yet he was astounded to find that the measuring surveyor had to come to him to know how they were constructed, and could not get out his quantities without his (Mr. Spiers's) assistance from his knowledge of the method of jointing in this particular work. We had in England a most excellent school of draughtsmen, who had arisen within the last few years, but notwithstanding their draughtsmanship they were indifferent designers of plans. In France they laid great stress on the study of plans, but when this study was attempted at the Royal Academy Mr. Street found out that it was difficult to teach the pupils to draw large plans, and so he set them to draw elevations. That was one of the difficulties they found in architectural students from want of previous training. Referring to the absence from provincial towns of the means of proper training, his experience led him to expect better training in students from the provinces, and especially in those from Scotland, than in those from London. In the country the pupils had the advantage of seeing the buildings carried out which they had been working upon. They had to take up a larger area of more varied work, and they had more varied practice than Londoners, who were frequently engaged in the carrying out of one or two large buildings. Provincial men must, therefore, not despair, as their pupils were better trained than London pupils. Mr. Grüning had referred to the value of workshop training, and he should bring that out later on. Mr. Bruton, of Oxford, complained that there were no schools of architecture in that city; but there were foundations, such as the Taylor Museum, which might well be applied for instruction in the art. Strange as the assertion might seem, Oxford was about the slowest place for education that ever existed. With regard to the remarks of Mr. Maclachlan, if that gentleman had studied in Paris he would

have seen the same variety and change in architecture as he saw in Germany, and as great differences between the French buildings as a shepherd saw in his sheep. He was glad to hear that in Germany they were turning their attention to measuring buildings. Mr. Aldridge had spoken of the difficulties of pupils in the provinces, and there could be no more eloquent description of what was required. He was sure Mr. Cates must have listened with great interest to this discussion, because it pointed with great force to the want of examinations. A man should go through the fullest education in order to prepare himself for examination. The lawyer knew he must pass an examination, and if the architect knew that he would have to do so he would read up works on various subjects, and in every possible way prepare himself to pass the ordeal successfully. The student would take an interest in preparing himself for examination, seeing the ultimate result to be attained. No one had referred to one portion of his paper, the importance of some training before a young man entered an office. What kind of training was there for them in London? He was inclined to recommend King's College and University College, and he could not see why parents should not insist on their sons spending some time in obtaining that class of instruction which was obtained in the German Gymnasiums. There were some public and private schools which were moving in that direction, and, as time went on, the necessity of teaching technical science in finishing schools would become more apparent. At present, at King's College and University College, they could derive instruction in all those branches which were taught at the Polytechnic schools in Germany and the École des Beaux Arts in Paris. In Manchester, they had Owen's College, and in Leeds and other large towns there were technical schools where those who intended to become architects could get their early training. It would be of the greatest value to any student if he could go through a course of training in the practical work of the workshop. All this would fit him for understanding and appreciating the work of the office. The great trouble we had to contend with under existing circumstances was that the student worked three or four years without understanding what he was doing, and found he might have learned in half the time if he had gone through the necessary preliminary training before he entered an architect's office. He not only took five years to do what might have been done in three, but he failed to get as much out of his master as he might have done. His advice to pupils in an office was that the sooner they began to design the sooner they would begin to work. It was of great importance that the pupil should know first of all what he had got to do in order to train himself for a definite result. He should exercise his powers of design and get the best training he could, and that would ultimately result in presenting a training which would be superior to that of any foreign school.

On Friday afternoon there was a visit to the workshops of Messrs. Cubitt & Co., Gray's Inn-road. A notice of this will be found on another page.

On Friday evening the sixth and concluding meeting of the Conference was held.

Mr. Cole A. Adams, President of the Architectural Association, occupied the chair, and in opening the proceedings, said that, following the precedent which had been usual in the Conferences which had been held in that room for many years past, it was decided this year on the Friday to hold a meeting which perhaps would be in a way specially dedicated,—if he might say so,—to the Architectural Association; and to that fact he owed the honour of being in the chair that evening. He was sure he was only expressing the wish of every member of the Architectural Association that the more a feeling of cordiality between the members of the senior and junior societies was cultivated the better it would be for both. The position they held to their *Alma Mater* was such as to leave no room for feelings of jealousy or rivalry. They passed through the ranks in the junior society for the purposes of education, and having passed through the classes of the Association, he trusted all the members would pass into the senior society, and thus keep up the connexion between the two institutions for many years,—far beyond the thirty years which Professor Kerr would treat of in his paper. Before calling upon Professor Kerr, he might say that Mr. White (the secretary) wished to make a communication to them.

Mr. Wm. H. White said the Honorary Secretary of the Société Centrale des Architectes had written to express his regret at not being able to attend the Conference to represent that Society, and Mr. A. N. Bailly (Membre de l'Institut de France, Inspecteur-Général Honoraire des Travaux d'Architecture de Paris, &c.), one of the oldest and most respected architects in Paris, had written to say he was obliged to remain in Paris. He had also received letters from M. Garnier (the architect of the new Opera-House in Paris), Professor von Hansen, of Vienna, in reference to the ownership of drawings; M. von Hasenauer, of Vienna; and others.

Mr. J. Macvicar Anderson, Hon. Sec. of the Institute, observed that he wished to express his gratification that they should, at the concluding meeting of the Conference, have their friend the President of the Architectural Association in the chair. It appeared to him though a fortuitous yet a happy circumstance, and he quite agreed with the remark of Mr. Cole Adams that the longer and closer the connexion between the senior and junior Societies existed the better it would be for both. He also wished to express the gratification and pleasure it had afforded the Institute to receive there, in their rooms and in a social manner at their tables, so many friends from the country. It had afforded them sincere satisfaction to see those gentlemen in London, and he was sure he was expressing the feeling of all metropolitan architects when he said that the more they could promote good feeling and harmony between themselves and their brethren in the country, the better it would be for the future of architecture throughout the kingdom.

The Chairman then called upon Professor Kerr to read his paper, which was as follows:—

ENGLISH ARCHITECTURE THIRTY YEARS HENCE.

The question I am requested to submit to the consideration of this meeting is one that has a certain particular and practical importance just now,—What is the line upon which the profession of architects is moving in England? In other words, what is likely to be the position of English architects, say, thirty years hence? I am expected to confine your attention to the artistic aspect of the question, but of course to regard it in a practical light.

Now we pretty well understand in these scientific days that all continuous enterprises of human industry or skill, or of social or intellectual activity, when looked at in any degree under the surface of affairs, are found to be subject to the government of certain laws of progression; so that it is the critical study of the past that becomes the only means of forecasting the future. In the arts more particularly is the fact forced upon the notice of thoughtful observers that there has been a continuous current of development gliding through all the ages in one grand inevitable course: now in the sunshine, now in the shade; here swift and strong, there feeble and sluggish; but always the same; the same springs, the same issue; great men and great successes,—and great failures with them,—being but the greater bubbles on the surface of events, and even the humblest of workers adding every one his indispensable contribution to the tide.

Amongst the arts of which I venture to speak in this high tone, I may at once say that I regard architecture as one of the very greatest,—perhaps, indeed, beyond dispute, the most subtle and most glorious of all. It is nothing to me, standing before an assembly like this, if I should be told to moderate my language, and to ask you to veil your faces before the painter or the poet. I do nothing of the kind. I ask you, rather, to look back along an expanse of magnificent building, whose length is not to be measured by furlongs or feet, or its area by acres, but its unbroken continuity by the very ages of history, throughout at least 5,000 years of time, and in whose earliest and crudest works, such is the inherent majesty of the art, Queen of the Arts, the noblest of mankind aimed at never less than the noblest homage to the noblest conceptions of the Divine.

Along this splendid line of artistic manifestation we see exemplified, more clearly than in almost anything else that philosophy can quote, the operation of the process now known by the name of evolution. The simplicity of it is, indeed, perfect. Given the desire to build in beauty,—nothing more,—and the whole scheme of architectural history throughout the past is understood; and the persistent sequence of the self-same scheme throughout the future too. Out of the desire there comes at once a continual endeavour after novelty, the diversity which supplies the material for selection. That which is worthy is reproduced; that which is not is not; and hence arise schools and styles, in the most direct and palpable form, by the survival of the fittest. Thus it is that the study, the very studentship, of this art becomes so essentially bound up in the past; for no training worthy of the name can stop short of a review of the whole historical scheme of development. And thus it is again that the progress of change in this art appears to be so slow, the limits of even the most eager originality so narrow, and the disappointment of the too ambitious so complete.

Therefore, if we would try to understand our own position just now as representatives for the moment of this great art in England, and to foresee the attitude of our order in the next generation, the easiest mode of procedure,—perhaps the only one,—is to begin a generation back, and so work forward to the present day, in the hope that our research may acquire momentum enough to carry us still forward a little way ints the future.

About fifty years ago, then, there happened certain occurrences which make the period a great landmark in English architectural history. In 1834 there was founded our professional guild, now so well known as the Institute of British Architects. In 1834 also the old Houses of Parliament at Westminster were burned down. The foundation of the Institute, and its incorporation by royal charter shortly after, indicated the arrival of the profession of architects in England at a significant stage of development and of organisation. The destruction of the important edifice which had accommodated the business of the Legislature afforded an opportunity to that profession to enter upon a new career. The accession of the young Queen Victoria in 1837, involving the inauguration of a new national spirit, may be regarded as one more, and perhaps the chief, in this group of events; and if we further include the advent, within a short time afterwards, of Her Majesty's most admirable Consort, as an ally to the great cause of culture,—and more especially, as regards our present purpose, with reference to the splendid new Palace of Parliament, by that time waiting for just such help as his,—we see, clustered within the compass of half a dozen years, a concurrence of circumstances by which there is constituted with remarkable precision just such a point of departure as we desire.

Let me remind you of the somewhat analogous combination of events under which English architecture started on a new line of development in the latter half of the seventeenth century:—the overthrow of the gloomy Puritan ascendancy, the establishment of a new and brilliant royalty, then the disaster of a great fire—we will call it the burning of the Cathedral of London—and the rise of a great architect. So also at the time now before us we have, in the death of William IV. and the accession of the youthful Victoria, the old worn-out Georgian Philistinism going down at last, rude and dogged as ever, and another social system arising, entirely new and bright, the hope of the world; and therewith another great fire, and the rise of another great architect. I am accustomed to speak of Wren and Barry as the two great architects of modern England, in whose especial eminence there is as yet no third great architect quite entitled to claim a share. With both of them alike, everything their hand touched seemed to turn to a certain personal graciousness of form not easily described or accounted for; neither of them, perhaps, attaining to the ideal which we are beginning to conceive of the perfect master of our wonderful art, with whom mechanical science and æsthetic grace advance hand in hand from the sketch to the consummation; each of them, indeed, in his degree very notably a designer of superficiation, if the truth must be told, but both accomplishing that superficiation with an infinite success of elegance altogether his own artistic quality.

From the Great Fire of London, that is to say, and the career of Sir Christopher Wren, to the burning of the old Parliament House and the career of Sir Charles Barry, there extends a period of English architectural history which represents the whole development of popular Neo-Classicism, from its rise to its fall; from St. Paul's Cathedral and Greenwich Hospital to St. Pancras Church, the National Gallery, the British Museum, the club-houses, and the plaster façades of the Regent's Park; when it was time at last that some change should come; and, if only as an enigma for your consideration, I think I see at the very beginning of this manifestation and at the very end the two most conspicuous masters of the situation, with no equal between. Perhaps I may go on to remark, as a coincidence, that from Barry's day to our own there extends the course of another remarkable architectural development, with its most powerful and characteristic exponents again at the beginning and at the end, Pugin and Street. I commend these circumstances to the curious: at the moment when Barry in his Club-houses offered us a new version of Wren's Classic, we threw it over and reverted to Gothic; and at the moment when Street in his Law Courts has brought Pugin's Gothic to supremacy, we now cast that aside and return to Classic. Such is the play of action and reaction; art is a long story, but its chapters are short.

At the commencement, then, of the Victorian age in which it is our privilege to live, this was the condition of architectural art in London. Sir John Soane, in old age and retirement, was the efficient representative of the best commonplace Greek taste. Cockerell, his successor in the professorship of the Academy, was the much more brilliant and accomplished exponent of the higher theoretic level of the same school. Smirke and Hardwick, on the lower ground of mere successful business, were of still the same order of designers. Wilkins's National Gallery and University College had been produced as exemplars of what Anglo-Greek ought to be, and had failed to secure the popularity expected. Barry,—whose age was under forty when he stood on Westminster Bridge staring at the conflagration of the Parliament House, and dreaming inexpressible dreams,—had designed his two club-houses in Pall-mall in a novel mode, and had received the applause which had been denied to Wilkins. I need only add that at the newly-established Institute, Tite, as a representative of the rude energy of a prosperous commercial practitioner and an adherent of the convenient abstract eclecticism of the thorough man of business, divided the leadership with Donaldson, most indefatigable writer and speaker, to whose entranced intelligence the study of architecture was a worship, and its miraculous origin in far antiquity a faith that never could be shaken. The extreme refinement of the state of opinion which I have thus indicated was endowed with shape and purpose by the Society of Dilettanti, under whose authority the latest and most characteristic enterprise of a long series was undertaken a few years afterwards by Mr. Penrose, in his elaborate admeasurements of the optical corrections of the Parthenon, the supreme and final outcome of a system of criticism which the world can never now be at the trouble to revive.

The inevitable operation of the natural law of reaction and revolt had meanwhile been producing in many minds a feeling of antagonism to this attenuated and traditional Classic. Romanticism, in short, of the more robust order had begun to despise criticism so effeminate and so frigid. Now, English romanticism takes two forms,—ancestor-worship and ecclesiasticism; and in both of these forms a change was coming over architecture. The Oxford movement, or High Church movement, or Mediæval revival,—call it which you will,—was acquiring force in the Church; whilst as regards the State, no sooner was it understood that a new palace of the Legislature was to be built on a grand scale, and that Sir Robert Smirke, as one of the standing architects of the Government, had been commissioned to prepare the design for it, than members of Parliament began promptly to agitate for a patriotic adoption of what was then designated the Baronial style,—"Gothic or Elizabethan" was the phrase eventually accepted,—and for the transference of the architect's retainer from the hands of the prosaic Smirke to those of some unknown romanticist, who should be selected by means of a public competition. Barry won the prize; and at the present moment, when an enthusiastic belief in the virtues of competition has been revived, in the hope that "fair-play" will cure all evils (and fair-play seems as coy as ever in answering to the call), it is interesting to remember that the fairness of the selection of Barry's design was never challenged by any criticism more severe than this,—that the favour of influential friends at court had not been refused, and that the ablest specialist assistance had been wisely secured.

The adoption of this design for the new Houses of Parliament consummated the Gothic revival. The baronial idea instantly took the fancy of the public; it formulated an innovation, allayed a disquietude, and satisfied the demands of a genuine reaction. Churches, it was true, had been built for some time in various kinds of pointed arcuation; castles also had been built for patriotic squires, even by Wilkins himself, with Gothic arches of no particular form, and some of them with Gothic cannon,—cannon of wood frowning ornamentally from embrasures of stucco; cathedrals also had been restored by the help of cast iron and compo; and London dining-rooms had been ingeniously adorned with tracery cut out of thin deal, and grained and varnished; but now all this was to be improved upon. Pugin fulminated his anathemas against everything that was spurious, everything that was pagan, everything that was modern; even the dainty engravings of Britton and Le Keux's cathedrals were supplanted by the masculine lithographs of a new school of travelling sketchers; Ruskin arose, as the prophet of a mysterious gospel unknown to the multitude; and England found itself at the commencement of an incomprehensible architectural civil war.

The contending parties gradually organised their forces. One called itself the Gothic party; the other the Classic party. There was a third, stronger than either in all but enthusiasm, which called itself the Eclectic party. At first, indeed, the Gothicists, like all originators of revolution, had to content themselves with the pleasures of hope, and to console themselves with the exercise of scorn. England is the home of compromise, and it was at length agreed that Gothic should be recognised as the proper mode for churches, Elizabethan for country houses, and Italian Classic for municipal buildings. It was agreed also that every individual practitioner should be permitted to do his best in all three styles, or, indeed, in any other he pleased, and to claim the respect of the world for so doing. Cockerell, in his Royal Academy lectures, pleaded earnestly for what he called catholicity, or universal forbearance. Donaldson, at the Institute, consented to accept the supernatural, to a reasonable extent, in Gothic as well as Greek; Tite had already actually taken a lead in Gothic design by his Scotch church in Bloomsbury; but, strange to say, Barry, the accepted prince of the practical revival, was at heart its enemy. I believe it is quite understood that, if the Government could have been persuaded by him, the Palace of Westminster would have been built after all in the stately style of the Italian Renaissance.

I ought not to omit to mention that at this time the architectural press, as we now understand the term, may be said to have been founded. I allude, of course, to the establishment of the first of our weekly newspapers.* Previously the *Civil Engineer and Architect's Journal*, a feeble monthly magazine, was the only organ of the profession, and necessarily one of very imperfect influence. The progress of architectural and engineering journalism separately, since that day, I need only say, has been most satisfactory; and I cannot help alluding especially to the remarkable development of the weekly illustrations of English architectural art, which cannot fail to be of immense artistic value throughout the world.

The year 1848 soon arrived. I need not remind you that it was a year of European revolution, out of which France, throwing off once more the embarrassments of tradition, entered upon a new and strange national career. For two hundred years Paris had been the focus of artistic culture, but of late the vivacity of the people had scarcely been seconded by the example of the Court. The Government now passed into the hands of a peculiar class of adventurous men of affairs, determined to purchase unlimited power for themselves at the price of unlimited luxury for the people. The arts do not inquire too closely into the character of their patrons; and whatever others may have to say of Napoleon III., architects must always hold his memory in honour for the artistic brilliancy (to say nothing of political wisdom) of the architectural operations which he so successfully conducted.

English architecture had not hitherto sought for inspiration in Paris. Neither, indeed, does it now, and I venture to think it never will; for, vastly as I admire all French art, I can never divest my mind of the feeling that I am admiring something whose charms are feminine. I say, therefore, that England, the very home of rough-and-ready masculinity, will probably never follow the precise formulas of French taste. But it was impossible that the new start which the French were making in social display in 1849 should fail to exert an influence upon English art in one way or another. The inauguration of the great system of international exhibitions brought this influence into play; and the years 1851 and 1855, taken together, produced a crisis in English architectural history which is now seen to have been almost more notable for its results than any other incident of the kind in modern times.

When the Exhibition of 1851 was opened, our professional world stood thus. The Prince Consort, now at the enterprising age of thirty-two, had become an important agent in the progress of general culture in his adopted country. It was soon understood that he had a considerable respect for architectural work, but that he had not the same regard for English architects. Perhaps this was partly due to the fact that the criticism of artistic building was in the confusion I have lately described, and that it occupied indeed what must be called low ground, a sort of unscientific squabbling ground to which a high-class German intellect might scarcely see its way to descend. Amongst the public duties which had come to be imposed upon him, one of the most prominent was the administration of the artistic completion of the new Houses of Parliament; and we may suppose him to have thus become deeply impressed with a sense of the tradesmanlike condition (if the phrase may be excused) in which he found popular English architecture and its auxiliary arts as a whole; a quality which is now candidly recognised as having been only too forcibly manifested in those days. I do not wish to attach to Prince Albert the character of a personal leader,—it would be false criticism to do so; but I think he was a particularly good representative of an impending change in the public intelligence of England; and it is no doubt the fact that the very peculiar unpopularity of the profession of architects, which, during the last fifteen or twenty years especially, has been so frequently exemplified to our cost, took its rise in the early days of the Prince's intervention in architectural affairs. The standard-bearers of the day, let us remember, were Barry and Pugin, Ruskin and Fergusson, Scott,—or rather Scott & Moffatt,—and Donaldson and Tite at the Institute. Barry's work at the Houses of Parliament was advancing tediously and mysteriously, and a sort of Philistine grumble against it was constantly being heard in the House of Commons, as if the architect and the legislature were not pulling together. Then Pugin, as the exponent proper of the Gothic Revival, although acting as Barry's very loyal ally in the great work itself privately, was, in his public capacity, simply a frantic enthusiast, whose fanaticism for the Mediæval, in season and out of season, that and nothing else, made confusion worse confounded. Of Ruskin, again, one can only say,—and all the more confidently now that he has in age turned against himself in youth,—that the specious, reckless, often meaningless rhetoric of his charming writings stirred up a vague and spurious sentimentalism, which, without benefiting architecture, was doing infinite damage to the architect. Fergusson, next in order, although as dogmatic as Ruskin, was as prosaic and cool as Ruskin was poetic and impassioned, and as well disposed to the working architect as Ruskin was scornfully inimical. But he cannot be said to have helped the profession, by his very considerable services to the art, so much as he unconsciously disparaged in the eyes of the public an order of artists who required an amateur to teach them. I have next mentioned Scott & Moffatt. For the moment I do not see the great ecclesiastical designer of a later date, but only the firm of reckless public competitioners, in whose hands

* The *Builder*, established in 1842.

the abuse of a practice, always signally open to abuse, had already attained dimensions which could not fail to bring down sooner or later a dignified æsthetic profession to the level of a grasping trade. Much as I revere the memory of Sir Gilbert Scott, I feel that I should be false to my duty at the present moment if I were to hesitate to blame him, and his too clever partner of forty years ago, for their introduction of a mode of struggling for work at any price, which I believe to have done an amount of injury to English architects only less than that which, I am sorry to say, I think it has yet to do. I have spoken lastly of Donaldson and Tite at the Institute. Of Professor Donaldson, I need only say that so far as a high-minded and fearless maintenance of the lofty character of our splendid art and its literature, and of the honourable historical position of our artists, antiquaries, and critics could defend us against assault, whether vulgar or refined, he never for an instant swerved from his duty as leader of the guild; and of Sir William Tite, although a man of very different qualities, I am glad to say, from personal knowledge, very much the same. By this time, I may add, Professor Cockerell, who never was wanting in courage to champion the cause of his order, could scarcely be called upon to be more than a looker-on.

I must now speak of that remarkable man, Henry Cole, whom I regard as having taken an exceedingly earnest and effective lead in the change that was coming over English art architectural. I use this term—*art architectural*—in order to suggest to you an important practical distinction between the academical *architecture* of the period preceding 1851, and the non-academical *architectural art* in general which then began to take its place,—a whole galaxy of constructive, formative, decorative, and industrial arts being now in question, amongst which the pure building-art of old traditions was but the central star.

Cole had for the work of his life the advancement of what we have been accustomed to call the minor arts; and there can be no doubt that he began upon the basis of a personal dislike to the professional practice of architecture, which he maintained to the end and bequeathed to his successors. Rightly or wrongly, he seems to have arrived at the conclusion that the architect was a fossil, whose function in the streets of ancient Rome, or in the cloisters of Mediæval abbeys, or in the market-places of modern but not too modern Italy, had no doubt been a useful function, judging by the remains of his performances, but who in modern London was a doer of nothing to speak of, or of nothing but what could be done quite as well without him. As matter of business, we know this to be mere folly; there is perhaps nothing in the work of this world which the untrained intelligence can never hope to accomplish, if the proper design of a high-class building be not such a thing; and the continual endeavour of uninformed persons to do their own architecture, in spite of a thousand failures, is only evidence, indeed, of the fascination of the unattainable. Cole, however, seems never to have permitted himself, as so many do, to be an amateur architect, or even to have encouraged any one else to be so; what he underrated was, not art, nor even business, but men. His own soul was wrapped up in detail, and he found the architects, as he thought, to be devoid of the knowledge of such detail, and content to trade upon a little experience merely in the drudgery of supervising building contractors. When he fell in with an architect like Digby Wyatt, who knew all that he himself knew, or could wish to know, of the arts of detail, and who knew also that which he acknowledged to be beyond his own reach, the whole volume of the historical art of splendid building, he could honour him, and did honour him as far as was convenient; but if the mere art of building, without the arts of detail, were alone in question, his opinion was that the Royal Engineers could manage that quite as well as any one need desire, and, indeed, all the better, because of one thing, that they were soldiers under discipline, and not like a good many architects he could name who were not under discipline, and whose successors, if we must tell the truth, are not under discipline yet.

The fact that the Prince Consort had built Osborne in 1848 without employing an architect (although the builder, of course, employed one) may have been encouraging to Mr. Cole when they came to compare notes; but the view of the matter which I prefer to take, as I have already suggested, is that both of these extremely intelligent and earnest men were in fact exercising shrewd foresight, and not merely cherishing a personal crotchet. At any rate, the immediate result of the Great Exhibition of 1851 was to open the eyes of Englishmen to the fact that the subtle spirit of artistic design ought to run through a great many branches of industrial production which they had been accustomed to regard as scarcely worth the trouble. That many of these were more or less related to building, or to the decoration or occupation of buildings, was plainly manifest; and the triumph of Cole was that he had laid a foundation for the popularity of the whole world of decorative arts, and, amongst the rest, the minor arts architectural. The Exposition held in Paris in 1855 carried still further the same idea; and some English architects began to perceive that their studies must go more and more into the detail of general art. Architecture was therefore now on the move in a new direction.

Under the remarkably clever personal administration of Cole, the practical outcome of the exhibitions speedily acquired form and substance in the institution of National Schools of Design, and eventually of the South Kensington Museum. The establishment of the Crystal Palace also at Sydenham, for an artistic popular resort, ought to be coupled with these undertakings, as being a measure carried out with the same end in view. As regards architects, it was no doubt a remarkable, and perhaps unfortunate, circumstance that a duke's gardener had to come in to design the Exhibition edifice, as if to show that it was not in artistic building alone that architects failed to keep pace with the times, but in scientific still more. We are not bound, however, to accept this view of the incident, and certainly Paxton never made his mark in either art or science.

"South Kensington," as it has long been popularly designated, in the character of a somewhat self-assertive bureau of the Government, may, I think, be described as the headquarters of art multifarious, no longer academical, but essentially non-academical. By academical art I mean to indicate, in the restricted sense, the old conventional "circle of the arts" as accepted by the Renaissance academies, comprising painting, sculpture, architecture, and no more, and all on the high level only of dignified tradition. When, for example, no longer ago than 1854, we find Mr. Tite's contribution to the Royal Academy exhibition to have been "A Composition of the Works of Inigo Jones," and Professor Donaldson's "An Architect's Dream, or Sketch of a Design for Opening the Crypt of St. Paul's" (after the manner of the Invalides at Paris), we can acknowledge now that academicalism had reigned quite long enough. We can also acknowledge now, when we have in a great measure enfranchised the practice of the art from such inconvenient formalism, so that our Classic and our Gothic alike are often almost too free in treatment, and too demonstratively defiant of the categorical criticism of the schools, that the practical function of the architect has acquired at the same time extended limits. He can no longer rest content with having provided a building that is merely conveniently planned, properly constructed, and well proportioned, which other hands shall then clothe with decorative work, and furnish with ornamental accessories; there is finishing work everywhere, minor art work, which is part and parcel of his scheme and which he must himself design and control; there is characteristic carving, for instance, and he must direct the carver; painting, still more; there may be even set pictures and statuary sometimes; there is metal-work, plaster-work or some equivalent, even paperhanging or some equivalent, and so on; there is floor-work, wall-work, cabinet-work, furniture-work; sometimes upholstery, carpets, tapestry; a multitude of miscellaneous fixtures and fittings, and even unfixed ornaments; all of these may more or less put in a claim to be "endowed with artistic merit" by the one designer, lest anything unexpectedly awry should mar the effect of the effect of the whole design. And this great change in the scope of the architect's work has come about, I think, in response to a corresponding change in public feeling, which must be associated with the operation of the South Kensington policy. Indeed, I am almost inclined to say that the *bric-à-brac* style, for such it is, of what we call Queen Anne architecture, is properly the South Kensington Museum style. Cole personally, the paramount genius of South Kensington, was originally, as Felix Summerley, content to devote himself for ever to *bric-à-brac*. There are cynical critics who will speak of the whole Museum as *bric-à-brac* still. And I, for one, have no objection to this, if I may take leave to identify with the name of *bric-à-brac* the idea of art multifarious and non-academical, that which underlies the entire range of the minor arts, unformulated often and unconventional, but constituting an inexhaustible source of everyday enjoyment which our Academies, when inflated with the pride of empty traditions, are disposed to ignore rather than attempt to work.

But the Gothic revival, no doubt, is entitled to claim a considerable share in this expansion of the architect's work,—his work, let me say, as chief of all the workmen. Pugin, for instance, was especially an apostle of the minor arts. The Neo-Greek dilletantism that preceded his day, and the Georgian Philistinism together, may be said to have shut the door upon them. It was under the successors of Pugin,—his direct successors in Gothic enthusiasm,—that they acquired the form and force they now possess in architectural business. South Kensington could never, perhaps, have converted the narrow connoisseurship of *bric-à-brac* into an expansive public interest in every possible kind of decorative and ornamental designship, but for the fanaticism, as it is called correctly enough, of Pugin and his school. And yet Coleism and Puginism were but unconscious allies, and are no better still. To this day South Kensington recognises little beyond Italian Renaissance, whereas even our Queen Anneists, — themselves stanch Mediævalists quite recently,—would rather have turned to anything else they could find. At any rate, the point I desire to make is this,—that the epoch of the first great international exhibitions is to be identified in the history of English architecture with the rise of the minor arts, which have thus been progressing amongst us for about thirty years.

The Gothic revival must now be described for its own sake. In the language of our popular Protestantism, this great movement was simply a return to the artistic style of the Roman Catholic or Mediævalist Church, of which it has been truly said that it is "the Church of Poetry and Art." At the date of the great exhibitions, Gothicism had got so far as to have acquired not only the undisputed possession of the whole ecclesiastical field in English architectural practice, but the disposition to claim whatever secular work was worth having. The theory that Italian art was only suited to Italian soil, that England required a style that was English, and that the only English style was the Gothic, was boldly advocated; and in 1857, when the Government instituted a public competition for the intended War and Foreign Offices at Whitehall, the competitors were found to be so equally divided in taste between Classicism and Gothicism that the adjudicators felt obliged to place the representatives of the two schools in alternate order for the prizes, to the number, I think, of fourteen in all, as an official acknowledgment of the absolutely equal value of secular Gothic and Classic in public esteem. We all know how in the end Scott's Gothic design was demonstratively selected for execution just before Lord Derby's Administration quitted office, and the style, almost still more demonstratively changed to Classic when Lord Palmerston came in. Such was the Battle of the Styles.

The chief merit, perhaps, to which the Gothic party laid claim was the resuscitation of the Mediæval principle of truthful articulation, or the correct correspondence of the motive of superficial design with the motive underlying construction. The styles of the Renaissance, they argued truly enough, were almost hopelessly entangled in shams, whilst the Mediæval, they said, had nothing to conceal or to disguise. This was a great step in the right direction, for false architecture cannot be true art. It is not to be affirmed, however, that our Gothic architects quite acted up to the pretensions of their school; it was scarcely to be expected that they should; the habit of fibbing on the drawing-board, persisted in from time to time of St. Paul's Cathedral (which, with all its merits, is a mass of fibs), had become inveterate in England; and even now the Spartan principle that the facts of construction shall never be compromised in

the design of superficiation is much too feebly recognised.

But the Gothic revival, as soon as it had acquired its full strength, brought about another result not so satisfactory to our professional repute. Architects were now divided into two "camps" (to use the appropriate language of Sir Gilbert Scott), regarding each other with "mutual scorn." English people may fully appreciate in politics the advantages derived from the antagonism of parties, but in art they do not. Consequently, when Gothicists proclaimed Classicists to be, in plain language, foolish brothers, and Classicists said very much the same of Gothicists, the character of the whole profession was lowered inevitably, and the effect was only too distinctly apparent in Parliament and the press. Within the profession itself the authorities were divided in doctrine thus:—Gothicism rested its claims of superiority chiefly upon its qualities of honesty and masculine fortitude, which in the work of Street and some others were soon developed into something like a contempt for the graces; whereas Classicism relied upon the concurrence of all modern Europe in its adoption, and while fully acknowledging the sin of sham, deprecated the substitution of ugliness for beauty, however masculine the one might appear to be, or however feminine the other.

There thus arose outside the profession a new Philistinism. Before many years it acquired unexpected importance by reason of the appointment, quite accidentally, of Mr. Ayrton to the office of First Commissioner of Works. Ayrton was a very Goliath of the Philistines, and when Edward Barry had the temerity to encounter him he went down before him in the most melancholy manner; and unfortunately he dragged us all with him, so that the unpopularity of architects became established as almost a national principle. But it is due to South Kensington to give it most of the credit, or discredit, of this consummation. Cole may be said to have hated not only architects, but all classes whatever of professional artists of the academical order. He regarded their pretensions on all hands alike as a mere traditional, conventional, and spurious self-importance, impeding the progress of those minor arts which he considered to afford the true pabulum for national taste. Accordingly, as a rule, whatever had to be done artistically under Cole must be done, so to speak, non-professionally; and, inasmuch as architecture was the most prominent of the professional arts, it was determined that, when building had to be done for South Kensington itself, the professional architect should be emphatically set aside. The military engineer was demonstratively substituted. Captain Fowke, a young officer of much general ability and of an amiable and well-disciplined nature, was made the representative of this policy. He became a favourite with the Prince Consort; he proved to be a man of large ideas; he entered thoroughly into the new system of artistic enterprise; he made a special study of new materials for design, such as iron and terra-cotta; and he was at once a judicious chief and a judicious subordinate. He died early; but if he had lived longer he could scarcely have accomplished more than he did. His successor, General Scott, carried on his work on the same lines; but Scott, being of a more genial temperament, allowed the architectural world, if not the public, to discover at last the hollowness of the system, by acknowledging frankly that he himself was no architect at all, even although that very grand edifice the Albert Hall was nominally his personal work. But I need not remind you that, when the Albert Memorial had to be built, South Kensington discreetly made no attempt to commit it even nominally to the artistic mercies of the Royal Engineers.

We have now arrived at a period of less than twenty years ago; and the condition of English architecture was this, as illustrated in the great competition for the Law Courts and the National Gallery. The Battle of the Styles was still in progress, and it cannot be denied that the Gothic party was victorious all along the line. Scott, Street, and Burges were its most prominent champions. Scott had the unassailable leadership in ecclesiastical work everywhere. But the qualities which made him so popular socially with a body of men like the clergy rendered him incapable of maintaining that militant attitude which so much better suited the disposition of his eminent pupil Street. Again and again, in obedience to the call of partisanship, and to the dictates no less of his own sincere earnestness in the admiration of what we may call the milder Gothic, Scott came forward as a combatant Mediævalist, and even made use at times of language that appeared to be strong. But no one was ever any the worse. In Street, however, the genius of the Revival possessed a soldier after its own heart. Even Ayrton had met his match; and, indeed, such has been the effect produced by the architect's undaunted attitude to the very end of his life, that the lawyers themselves in high places, exasperated at the universal anachronism and anomaly amidst which they are compelled, through sheer force of this one dead man's will, to perform their uneasy business, exclaim against him with bated breath. The third of our great Gothic trio, Burges, was not so much a man of power as of a certain playful fanaticism, which induced affectionate forbearance, and never provoked to wrath. With his intimates he was "Billy"; I wonder if any one ever called Street "Georgie?" But, of the three, Burges was by far the most simple artistic spirit. Scott was a laborious and pushing man of business, with a congenial occupation; Street, a fighting ecclesiastic; Burges, an enamoured boy,—one Low Church, one High Church, one No Church. But these three together represented the triumph of the great Gothic revival; and how strange it must appear to some of us that this triumph, which, like all our little mortal victories, seemed at the time so enduring, is how only an incident of history, and yet but a few years old!

By an ingenious contrivance of somebody's, the urgent demand for new Courts of Justice and the supposed desire for a new National Gallery were so combined together and made the occasion of the brace of competitions alluded to, that Gothic should have its own way with one and Classic with the other. The Classic leaders of the day, however, were neither many nor strong; all the real artistic vigour was now Gothic—romantic. The result of the contest, after the customary vicissitudes, was the appointment of Street to build the Courts of Justice in an Academic style, probably the most severely uncompromising that had ever been attempted in the world of archæological art. The edifice has but recently been finished. It is a monument of artistic resolution, and, of course, of artistic skill. But it is much more than this. Such is the fearless muscularity of its artistic attitude, such the vehemence of its characteristic Gothic force,—let me at once say ruthless violence,—that without it the whole process of the Revival had been quite incomplete. But, for that very reason, the consummation at length accomplished, it was fit that the great movement should confess itself exhausted. Street died at the very goal, and his cause died with him. Except in ecclesiastical work, our modern Gothic of any high pretension is now no more; it has done its service, and done it well.

A popular successor to the style of secular Gothic has necessarily been growing up of late years by the mere action of natural law; indeed, such is the leisurely pace of architectural reform, that the new mode has been making its way slowly for more years than may be generally supposed. This is what is somewhat inexpressively and arbitrarily called by the name of the Queen Anne style, as if it were an act of mere revival. But I have suggested to you that it is really a *bric-à-brac* style peculiar to our own day, a minor art style which the influence of South Kensington may claim to have brought about, even if unconsciously. Within its own limits, and directly, no bureaucratic influence can do much in the way of producing a change of public architectural practice; it is a public demand which alone can have that effect. But it was South Kensington, as it seems to me, that created the public demand, now being satisfied by means of an infinitude of charming picturesque detail, chiefly appearing, however, in the design of small works. This is a much more philosophical way of accounting for the change than by attributing it to accident, or to any sort of personal authority. But Mr. Norman Shaw, whose modest and painstaking perseverance of character especially qualifies him, with the help of extraordinary dexterity of draughtsmanship, to be the unambitious agent of an artistic manifestation of this kind, fully deserves the credit of leadership; and he has been followed by a few equally brilliant men who have now unquestionably attained the status of a school, and one whose merits are becoming very considerable.

It is an exceedingly interesting exercise in criticism to inquire what is to be the outcome of this very peculiar movement. That it must gradually lose itself in a return to the universal European Renaissance, may probably be safely asserted. We must bear in mind,—neo-Mediævalist criticism being here altogether unscientific,—that this great historical style, taken in its entirety, although often called Italian as an alternative title, was never such a thing as a merely local Italian, which by accident happened to spread over Europe. It was a Modern European style, which took its rise on the spot where modern Europe had its birth, and at the date when modern Europe was so born. To say that it spread westward until it had overrun the whole European world as a universally accepted mode of building, and that it has been maintained in use ever since, and still is maintained for all ordinary purposes without a question being raised,—except by people who are before the age, or behind it,—is to describe exactly the process by which every great style of design necessarily conquers its allotted territory; and when we in England claim credit with the world, as we do, and are fully entitled to do for the exceptional merit of having originated and carried to great perfection the Gothic Revival as a special act of characteristic motive which has now reached a turning-point after having fully satisfied our desires, what is this but a confirmation of the principle by a most unique exception?

If we now proceed to look a little more closely into the future, we have to account for three styles at present in use in England. First, there is the customary style of Modern Europe; Secondly, the Revived Gothic, or the style of Mediæval Europe and thirdly, a certain popular and local mode which I say differs from both, but takes after both, essentially a minor-art style, and obviously transitional, prompting us already to ask ourselves what is, fourthly, to follow for a permanency?

In the first place, let us take the Gothic. Now the Gothic Revival,—which, as I have already said, was a return to the whole artistic system of the grand Mediæval church,—*par excellence* the church of the imagination,—so far as its ecclesiastical purpose extended, has not by any means exhausted itself. Architects of the type of Mr. Butterfield on the one hand, and of Mr. Pearson on the other, have, I think, a long career before them still; that is to say, Gothic churches show no sign of losing their popularity in England yet. But in municipal and domestic work the case is different, and the secular Gothic having culminated in the London Law Courts, has surrendered its claims for ever. But let me put the case in another way. The movement of national sentiment which produced the Gothic Revival, and in its particular form, I observe once more, it was peculiar to England, other nations being mere imitators,—was partly ecclesiastical and partly social. It was the social phase of it which operated in 1834 in the demand that the new Houses of Parliament should be designed in what was called "Gothic or Elizabethan." This was for the sake of archæology. Up to that date, and long after, when new churches were built in so-called Gothic, this also was not for any reason properly ecclesiastical, but on archæological ground alone. The ecclesiastical motive, however, was all this time developing itself, chiefly in the universities; and in due course it came before the general public in the rise and progress of a powerful theological party. Now we are not theologians here, but artists; and the way in which we have to look at this very remarkable social phenomenon is, I think, to regard it as inevitable artistic reform, using the term in a very wide sense. It was the introduction of the infinite artistic element, or poetic element, into the English Church, as opposed to a dull and dismal Philistinism which had been in possession of it for many generations. We were to have for the future artistic music, artistic decoration, artistic ceremonial, artistic architecture, and, as I venture to add, artistic doctrine and discipline. This, I may safely affirm, is the harmless way in which the people at large have always looked at the case; and it is especially proved to be so by the circumstance that even the Nonconformists and the Scotch Presbyterians have accepted the new system as far as they could. I need not remind you how earnestly it was embraced by English architects; in fact, we may say that architecture has been almost the helm of the enterprise, answering to every call with a readiness of

resource for which English genius may justly claim the lasting admiration of the artistic world. It is the ecclesiastical Gothic, therefore, as the style of artistic religion, that I regard to be the only natural or historical form of the Revival. That it has taken a strong hold upon the affections of the people cannot be doubted, and I scarcely care to ask you to fix a period for the duration of its popularity. Like all other manifestations of sentiment, it must in time give way to something new; but let us hope at least that it may be something better rather than worse. Looking again at the influence of the minor arts, it must be borne in mind that, as they stand in practice, they owe almost all their present importance in England to their revivification by means of ecclesiastical architecture; so that, if it should be through the minor arts that the coming style of architecture is to be determined, there seems to be no reason why this should affect our revived ecclesiastical Gothic otherwise than by the continued amelioration of its sometimes too masculine manners, an effect which is not by any means to be discouraged.

As regards, in the next place, the exact position amongst us of the general Modern European mode, from which the French, the Italians, and even the Germans have never swerved, as we have done,—except in mere superficial imitation of ourselves,—I have only to repeat what I have already said, that we cannot help returning to it, and that, indeed, we are already so doing.

Turning now to our third manifestation,—the so-called Queen Anne,—I think one motive which lies at the root of it may be thus described. Secular Gothic had for its principal basis the element of picturesqueness; it was, indeed, frequently designated the picturesque style, as thus distinguished in spirit from the Classic style or style of repose. When, therefore, it was found that municipal buildings and private dwelling-houses designed in this manner, unless all authenticity were expressly sacrificed, proved to be unacceptable to the ordinary feeling of the day, and that, in fact, English common sense, while admiring the picturesque greatly, pronounced against the practical inconvenience of obsolete forms and arrangements, it was necessary to find something to take the place for a time of the rejected style, without surrendering the picturesque character. Mr. Norman Shaw and his colleagues have accomplished this end, as I think, successfully; and it was done by means of the subsidiary art of what I will venture to call *sketchmanship*. The Gothicists had become enthusiastic sketchers; Street was the very prince of sketch-making out of doors; in fact, architectural sketching of the picturesque order was found to be the *forte* of Englishmen, bringing out in all its force the rough-and-ready national preference for experimental study instead of philosophical. So what was done was to make sketches of a new class of picturesque old buildings, not necessarily pure Gothic, or not even Gothic at all. I am afraid I must say that the specimens selected turned out generally to be Dutch. In a word, with the help of the good-natured name of Queen Anne, whose reign coincided sufficiently well with the use of a kind of Dutch art in England, there was at length brought about a certain popularity for red-brick buildings, with features neither Gothic nor Classic, but quaintly pleasing, and, so to speak, of a sort of Old English type. Nothing could be better suited for such an occasion. The recent development of the minor arts, moreover, was fully recognised; for Dutch art and *bric-à-brac* are never far apart. And so the Queen Anne architects are making very good innings, and just now are doing better and better work daily, although, no doubt, still leaving room for improvement. Some of the drawings of interiors more particularly, which are produced under names unknown to most of us, seem to me to evidence a degree of manual dexterity which ought to tell upon the artistic handling of a higher class of architectural style when the time comes.

What, then, is the higher style to be? I can only suppose, as I have said, that it must be the standard Renaissance in some form or other. We may now ask, therefore, whether England is to insist upon producing any modification of it to suit her own national character; and here a very interesting point comes into view. It is said that, in the history of modern intellectual development, the two races which occupy Europe, the Latin and the Teutonic, stand in this relation to each other, that the Latins initiate what the Teutons perfect. The more imaginative genius of the French and the Italians, that is to say, having its function in the origination of almost all great discoveries, it is the more practical scientific power of the Germans and English that assumes the task of their development. If this be true with reference to the arts, England in the coming generation may be destined to take the lead of even France; and I for one have no objection to look this possibility fairly in the face. Already the Ecclesiastical Gothic of England in our own day may certainly hold up its head beside anything that France has done; and, perhaps, in the coming Renaissance we may find ourselves no less able to compete with our gifted neighbours. Bright and joyous as the French Renaissance always is, there may be a certain vigour of manliness reserved for the English, which, in an age of increasing manliness and increasing English influence, shall accomplish unexpected results. It is of little use to speculate about the mere details of one academical style or another, and the introduction of this class of features, and the rejection of that, as if personal authority were to govern the course of events; natural law will have its way in this as in all else, and if English intellectual enterprise is to be fairly challenged to accomplish an adaptation of the somewhat hard-worked forms of the Italian-European, I do not see why in the next century an English-European style should not take the lead throughout the world.

Let us further inquire what is the present drift of English architectural sentiment in the abstract. The Mediæval romanticism which a few years ago was the dominant feeling has recently been disappearing with such a strange rapidity that it seems almost doubtful whether the secular Gothic party have not deserted to the enemy in a body. Now, I confess I should be sorry if this were really so; because I think the peculiar artistic enthusiasm which actuated Pugin, Scott, Street, and Burges, cannot well be dispensed with for some time to come. No doubt a new enthusiasm will spring up; but the Queen Anne movement is not such a thing; it is an impulse of a much more feeble and evanescent character. The attitude which is assumed by the somewhat mysterious organisation of "The Society for the Protection of Ancient Buildings" seems for a moment now and then to be all that is left of the Gothic enthusiasm; but on closer acquaintance this impression is not confirmed. For it declines emphatically to be considered representative of Gothic alone, or, indeed, we may say, of Gothic at all. Its object is not even artistic, but historical; to preserve what is left of the past in the most indiscriminate way; whether good or bad, old or new, preserve it all, so that the reverie of the wayfarer may have not only something authentic, but everything veritable to dwell upon, even when the light of life, perhaps never a very bright light, has quite gone out. This, I need scarcely repeat, is not an enthusiasm of art,—indeed, scarcely one of archæology; and it has become identified with architecture only because buildings are the most conspicuous relics for such a form of patriotic reverence. I may add, moreover, that the influence of archæology itself upon architecture seems within the last few years to have given way; and I think this is to be regretted too, inasmuch as our archæologists, like our old antiquarians the *dilettanti*, if only as matter of prestige, brought the element of learning into prominent connexion with our noble work. The minor art architecture of to-day exhibits again in these respects its conformity with the South Kensington principle, which, in making art a thing of popular skill, and not of academical knowledge, widens the ground that is cultivated, but at the expense necessarily of the depth of cultivation. That our present age is one of superficiality in many other matters besides this, is a well-established fact; and I am not sure that it is to be regretted; for if we can see that the field of art, as actually enjoyable by the multitude of us, is thus being extended so largely, we may well be content to let the learning reappear in its own way and at its own time.

But there is another point to be noticed here, namely the way in which the architectural arts are being controlled and even directed by the artifices of draughtsmanship, or sketchmanship, regarded as a delightful, but delusive, sleight of hand. In the minor arts of decoration, such as glass-painting, carving, painted ornament, and so on, it is easy to see that clever drawing is in a great measure the essence of the artistic manifestation; but we cannot shut our eyes to the fact that in the now very pleasant work of furniture design, when in the hands of architects, the same clever drawing is fully accepted in the same way; and, as matters go, it is but a step in the style of the moment from furniture to building. Our architecture has thus come to be sketch-designed and sketchy, careless and vague in detail; a thing of scene-painting, picturesque at any price, restless and not necessarily anything else; exceedingly clever on paper, and, when carefully carried out, pretty and piquant in execution, but greatly wanting in the nobler qualities. I do not suppose, however, that this will last long; and, even before the so-called Queen Anne mode itself gives way, we may expect, I hope, to see a more careful manipulation of the modelling becoming universal: indeed, it is already making progress.

Another matter of sentiment to be noted is the abatement of that cynical poeticism which was introduced by Mr. Ruskin. I never could understand why this exquisite dream-painter should have ever taken up such a subject as architecture, except for the indomitable courage of the thing; but there can be no doubt that his visionary doctrines,—and the more visionary necessarily the more vague,—have had a great effect in helping what was weak English art to conquer strong English Philistinism; and, if this involved a certain amount of inconvenient romancing when applied to the practical work of architects, such a result might be expected to appear, and the effect of the medicine must be allowed to wear off by degrees. At all events, now that the artistic spirit has taken possession of us, we need not grudge our thanks to the influence, perhaps upon the public mind more than the professional, of the writings of Ruskin.

But we have, nevertheless, still to face the fact that in high places in England a new Philistinism has been for many years acquiring a certain force,—indeed for thirty years,—an influence antagonistic both to architecture and to architects. The building of the Houses of Parliament in a Gothic style was no sooner fairly under way than the common sense of the more utilitarian order of men connected with the Legislature revolted against it as an anachronism. The architect of the structure, even if he himself had been at first of the same opinion, had, of course, to take all the blame; and, when the edifice came at length to be occupied, there was a cry raised of inconvenience and incongruousness, which has been kept up ever since. In course of time, when the son of the great architect, thinking he had acquired by his father's bequest the position of an hereditary successor, came into collision with Mr. Ayrton, and was ruthlessly defeated by that champion of the Philistines, backed by the unsympathetic logic of the courts of law, it would be idle to affect not to see that the pretensions of architects,—the Prime Minister himself had to say they were untenable,—had come to be seriously distrusted. The immediate effect of it was that the Government determined to dispense with outside architects by making use of the officials of the Department of Public Works; and it is still understood that this rule is practically in force for a permanency. The charges made against the profession on this ground are shortly these,—that convenience and economy are sacrificed to monumental appearance, and that the severe character of the commercial contract with a builder is tampered with by the introduction of extras. Upon these questions I need only observe that the most successful architects in England from time immemorial,—I do not say the most artistic,—will be found to have been the most mercantile in their manners; and, secondly, that the artistic element in architecture is not recognised by law, or recognisable in any way by the legal mind. I may also point out that the typical English gentleman,—and typical English legislator,—is a person whose ideas of building are still of primitive simplicity, and that his impression of an architect's business is equally devoid of sentimental considerations. But I do not consider that the so-called unpopularity of architects goes really deeper than this; and if any architect who happens to obtain Government employment,—scarcely ever a desirable thing, by the way,—will condescend to bring his ambition down to the practical level of his private business, and

to do everything in strictly commercial form, there is no reason why he should not give satisfaction.

One word more must be said here upon the influence of competitions. Looking at the eagerness with which these contests are entered upon, the disregard of commercial calculation that is manifested even by the leaders of the profession, and the unseemly bickering that invariably results, how is it to be expected that such men as are at the head of public affairs in a commonwealth of commercial common sense like ours should regard either architecture or architects with due respect? The logical conclusion obviously is that the designs which are so freely offered for nothing must be worth nothing, and that the men who are so ready to work for nothing must be taken at their own valuation. Nevertheless, although I believe it is almost invariably the case that it is not the proprietors that call for a competition for their own sake, but the architects who virtually solicit permission to compete against each other, I am afraid in speculating upon the future of the profession, we must expect this practice of competing to increase rather than diminish. Sooner or later, however, some check must be put upon it, either by the good sense of the public, or by a feeling of shame on the part of the architects themselves; up to the present moment I do not see that any effective steps whatever have been taken towards that end. Still, on the other hand, I cannot but frankly acknowledge the opinion that, without the peculiar artistic exercise and enterprise which competitions induce, English architecture could not possibly have done all it has done during the last half-century. I chiefly object to the great waste the practice occasions, not only in money, but in time, temper, and character.

I may now say a few words,—still keeping to the artistic view of my subject,—upon the position of architects in respect of business. I need not repeat in any way what I have said of the advancing popularity of minor-art architecture, and the increasing competency of our architects to deal with it. But what of the still more rapidly increasing numbers of the men who have to live by it? And what is the state of their organisation?

In the first place, I may express my opinion that the Institute of Architects, established now fifty years ago under circumstances very different from those of the present day, does not display either the vigour or the intelligence which the service of the profession requires, whether we look to the interests of the art or to those of the artists. It is to be hoped that something may be done in that quarter before long; but it must take time: thirty years hence, at any rate, the Institute, we may safely say, ought to be much more earnestly devoted to the practical utilities of art than it is now.

The Royal Academy, also, if architectural art is to retain its connexion with it much longer, must, I venture to suppose, enlarge its views of the minor arts considerably; and here I think we may fortunately expect to see both painters and sculptors entering into the matter with understanding as well as with sincerity.

Turning next to the educational question, we find that examination tests are becoming the order of the day; but whether, in respect of architecture, the introduction of artistic design into the programme can be accomplished, seems still to be matter of doubt. That some kind of academical diploma for art-architectural in its expanding form must, however, sooner or later, be contrived, both to conciliate the artist and to meet a public demand, can scarcely be matter of doubt.

A circumstance that must not be overlooked is the still-increasing employment of professional architects all over the country, which, looking at the sum total, is so far encouraging, even if individual instances of dissatisfaction are numerous. Not many years ago there were but few architects of really good position, except in London and the larger provincial towns. Now the smaller towns, and some that are almost villages, are occupied by practitioners who are frequently quite equal to their metropolitan brethren in skill. The pupils also of provincial men have in some instances better work passing through their hands than those who are in average London offices; and, thanks to a study of the photo-lithographic illustrations of the professional journals, their draughtsmanship is often of quite as high an order as the best in London. All this points to a condition of things in the near future throughout England in which men architecturally educated are to do a vast amount of good art-work in one way or another, and, therefore, in many ways. Consequently, when I hear the question asked, as I often do, what is to become of the increasing host of young architectural pupils, my answer is that they will be drafted off more and more before long into the service of many charming arts. For there is a certain peculiar characteristic in architectural training,—namely, the habitude of constructional design,—which, even while as yet not so devoid of the old make-believe as we could wish, is still expressly calculated to prepare the mind for that association of the superficial with the substantial which becomes the most essential charm in all formative and ornamental art when once publicly understood, and which the mere counting-house designer acquires, if at all, under great disadvantages.

Another point of importance in our prospect of the next generation of architects is the work connected with so-called engineering construction. Perhaps the most regrettable weakness of English architects at the present time, in point of dignity, is their want of that higher scientific skill which they allow engineers to monopolise. To give a familiar instance, it is quite common for an architect of eminence, when he happens to have ironwork of any magnitude to deal with, to hand it over altogether to an engineer to design, like a solicitor employing counsel to draft a deed. Now this is to be regretted. The reason for the practice obviously is that there is no sufficient current of such work passing through the architect's own hands to keep him up to it, and that he therefore must call in a specialist who does nothing else. It would be useless and, indeed, unfair to reject such an argument; but what I want you to do is to consider what a far superior position the architectural profession would occupy if it were publicly understood that they did all such work for themselves, even if the fact went no further than this,—that the aid came from a specialist architect and not from an engineer. Still, looking at art, what I should like to see is an architecturally-educated man designing such a thing as the most advanced ironwork, and introducing true architectural art into it as his design went on. Otherwise, if one of these two kindred professions has to call in the specialist aid of the other, why should it not be the engineering constructor who calls in the architectural designer? Why should all our building operations of the so-called, and improperly so-called, engineering order,—viaducts, bridges, great roofs, railway stations, piers, embankments, and much more,—be left barren and unfruitful of grace because the designers of them, professing nothing of the artistic spirit themselves, assume that it has no connexion with their work? Here, I would fain hope we may see another sphere of business, and, indeed, one of vast importance and grandeur, opening out in the next generation to the English architect.

To conclude, in answering for yourselves the question what is to be the position of English architecture, let us say, thirty years hence, I invite you simply to regard the profession as one that has been advancing during a corresponding period of the immediate past in a certain direction and at a certain pace which a retrospect of recent history such as I have offered seems to indicate clearly enough, and then to follow forward the same line at an increasing rate of evolution. If the next thirty years should do as much as the last fifty have done, then it becomes easy to understand that the process of development would have to cover as much ground as has been covered since the time of the foundation of our Institute, and the inception of the design of the new Houses of Parliament, in the old-fashioned reign of King William IV. We do not require to imagine the occurrence of any catastrophe; but the change produced upon the face of our art and our profession must undoubtedly be great, and, perhaps may be greater than any argument such as mine suggests. For, during the last fifty years, Dilettantism has gone down before the Romanticism of the Gothic Revival; and this in its turn has at length given place, after adding a very glorious chapter to the history of the art. The old Philistinism of the Georges has been vanquished by the South Kensington movement, as a movement of the people; and a new Philistinism has arisen, which has to be vanquished, and will be, in due time. The empty conventional formulas of the academical arts have been vigorously assailed by the new non-academical substantial facts, and the minor arts are already so far triumphant before the common sense of England that architecture itself has taken service in their cause, and a great deal for the better if a little for the worse. In these campaigns the whole lives of such great men as Pugin and Barry, Scott and Street, have been expended, and the task of great writers like Ruskin and Fergusson exhausted. Cole has passed through his long and busy, masterly and masterful career. The genial influence of Prince Albert, infinitely beneficial to the artistic sentiment, has already survived his own august life for three-and-twenty years. This artistic sentiment has for the first time spread all over our country, one of the kindliest graces of the splendid Victorian age; and England is now ready to enter upon a new chapter of her magnificent history, not, let us hope, with arms in her hands, whether for conquest or defence, but with the fruits of science and the flowers of art. And possibly,—indeed, I venture to think not improbably,—it may be the destiny of England at a period by no means remote, in the development of the advancing scheme of Anglo-Saxon civilisation, to assume a leadership,—such as she already possesses in so much besides,—in the illustrious art which it is the pride and the joy of this assembly to represent.

The discussion which followed the reading of this paper will be found on page 713.

VISIT TO THE BROMPTON ORATORY.

ON Thursday, the 8th inst., the members and their guests, at 11 a.m., visited the new Oratory at Brompton, where they were received in the nave by Mr. Herbert A. Gribble, the architect of the building, who, after a few preliminary words of welcome, proceeded to conduct the visitors round the nine chapels, commencing with the first one on the north side, being that of St. Patrick. Our readers will remember that the Oratory was visited by the members of the Architectural Association on March 8th last, and it is evident a considerable amount of progress has been made here during the last two months. The Oratory has been opened in the interval for divine service, and the decorations are now in a very advanced state. Mr. Gribble stated that the altar in St. Patrick's Chapel has been executed in Sienna, Sicilian, and other marbles, by Mr. George Mitchell, of Brompton-road, for the sum of 294*l.*; it was commenced and completed in the short space of seven weeks. In the next chapel, that of St. Mary Magdalen, Mr. Gribble said the altar had cost 1,100*l.* The mosaic panels are now completed on the walls, and certainly have a beautiful effect. Passing through the Calvary Chapel (under the organ chamber), the members reached the Lady Chapel, where was pointed out the beautiful altar from Brescia, in Italy, which Mr. Gribble stated had been purchased for a mere song, but, upon which, including the purchase, cost of conveyance to England, and restoration, the total outlay had been 4,000*l.*

VISIT TO THE CENTRAL TECHNICAL COLLEGE.

A LITTLE later the members inspected the new Central Technical College, South Kensington. Here it was explained that the architect, Mr. Alfred Waterhouse, A.R.A., was on the Continent, but Mr. Cooper (from the office of the architect), Mr. Lovatt, jun., the contractor, and Mr. T. Streeter (clerk of the works) conducted the visitors over the building and explained the working drawings and general arrangements. The college has been erected by the City and Guilds of London Technical Institution at a cost of about 75,000*l.* Since the foundation-stone was laid by H.R.H. the Prince of Wales, July 18th, 1881, the building has rapidly progressed, and now only awaits the necessary fittings to be ready for the commencement of the work for which it was erected. The building has a principal frontage of 295 ft. on the west side of the Exhibition-road, its extreme depth being 140 ft. It is a building of five stories, and is throughout of fireproof construction. The façade towards the Exhibition-road has a central pavilion of an extreme height of 113 ft. above the footway, and two end gabled pavilions of 95 ft. high each. The facings throughout the buildings are of Suffolk red bricks with red

terra-cotta dressings, the latter being supplied by Messrs. Gibbs & Canning, of Tamworth. On the front are the coats of arms of twenty of the principal manufacturing towns of Great Britain and also the Royal and Civic arms, and those of the principal guilds, the whole of which were modelled by Mr. James Gamble, of South Kensington. In the centre gable is fixed a clock; above are three bells, on which the hours and quarters are struck, the whole being supplied by Messrs. Gillett & Co., of Croydon; the face of the clock, which is 8 ft. 6 in. diameter, is of glass mosaic, and was executed, as was also the whole of the mosaic in corridors and hall, by Messrs. Burke & Co. of Newman-street. In the basement are rooms with isolated brick piers for delicate balance experiments, constructed on foundations which go 16 ft. deep in the ground. Here are also four large rooms for mechanical workshops, together with metallurgical laboratory, engine-room and boiler-room, and a large top-lighted workshop, about 85 ft. by 60 ft. The two boilers, which are of Siemens's steel, were constructed specially for the building by Messrs. Galloway, of Manchester, and are of sufficient power to furnish steam for the motive power required for the machinery and for the heating apparatus. At the north end are the water-closets and urinals. On this floor also are a large lavatory for students, and two rooms which will be fitted with lockers; also twenty-eight coal and storage vaults. On the ground-floor in the centre is a spacious hall with a groined ceiling supported on granite and faïence columns, to the left of which are class-rooms for Physics and Mathematics; and on the right those for the Engineering department. At the back are two galleried theatres, respectively 50 ft. by 35 ft. and 50 ft. by 31 ft., to each of which is attached a preparation-room. There are also spacious lavatories on this floor. On the first-floor are the offices, directors' room, and council-room, in the latter of which the arms of the seventy-six guilds will be placed. In the centre, over the entrance, is the library, and to the south are four large class-rooms for the Physics department. The second floor is arranged for class-rooms for Chemistry and Art, and over the lecture-theatres are two chemical laboratories. On the third floor are the principal chemical laboratory, 74 ft. by 34 ft.; a museum, 70 ft. by 35 ft.; a large class-room, c mical store-rooms, refreshment-room, kitchen, and caretaker's apartments. Above part of the northern wing is a large asphalted flat. Access is obtained to the various floors by means of three staircases, the ntre or principal one having a wide central flight and two return flights. The whole of the piers and balustrade in hall are of Messrs. Wilcock & Co.'s Burmantofts faïence, of a ich yellow colour. All the steps have been supplied by Messrs. Stuart, and are cf their granolithic concrete; the same firm have also laid the basement and second and third floor corridors with that material. A steam lift is provided in the northern wing. The heating and ventilating arrangements are being carried out by Messrs. Bacon & Co., the warm air being conveyed into the rooms by special inlets, the outlets being the ordinary fireplace openings, where (instead of stoves) ornamental iron grilles re inserted. All the walls are finished in plain tints with "Duresco," the work having been executed for Messrs. Lovatt by Mr. Howe, of Wigmore-street and Forest-hill. As stated, the architect for the building is Mr. Alfred Waterhouse, A.R.A. Messrs. Munday & Sons were the contractors for the foundations, and Messrs. Henry Lovatt & Son, of Wolverhampton, are the contractors for the whole of the superstructure. Mr. T. Streeter has acted as clerk of the works, and Mr. Roberts as builder's foreman. A large illustration of the front elevation, with a ground plan and some additional particulars, will be found in the *Builder* for January 5th ast. This and the preceding visit were made under the charge of Mr. Cole A. Adams nd Mr. G. Richards Julian. The whole pa then proceeded under the guidance of Mr. . W. Cutler and Mr. Cole A. Adams to Stafford House.

VISITS TO WEST END MANSIONS.

STAFFORD HOUSE.

The members and visitors assembled here at two p.m., and were admitted by special tickets, by permission of his Grace the Duke of Sutherland, K.G. Stafford House, at one time called York House is, as many of our readers are aware, in the immediate vicinity of St. James's Palace, and between it and the Green Park. It was erected, all but the upper story, for the late Duke of York, with money advanced for the purpose by the Marquis of Stafford, afterwards the first Duke of Sutherland. The Duke of York never resided in it, having died before its completion. The Crown lease was sold to the Duke of Sutherland July 6th, 1841, for the sum of 72,000*l*. The upper story was added afterwards. Peter Cunningham says, "This is said to be the finest private mansion in the metropolis. Nothing can compete with it in size, taste, or decoration. The great dining-room is worthy of Versailles." The land on which Stafford House stands belongs to the Crown, and the duke pays an annual groundrent of 758*l*. It stands partly on the site of Godolphin House, and partly on the site of the Queen's Library,—the one built by the queen of George II. At least 250,000*l*. has been expended on Stafford House. It was erected from the designs of Messrs. Wyatt, architects. Printed copies of the Messrs. Wyatt's plans, as also those of Mr. (afterwards Sir Robert) Smirke for the same building, were exhibited to the visitors. The internal arrangements were designed by Sir Charles Barry, R.A. The Sutherland Gallery, as it is called, is a noble room, 126 ft. long by 32 ft. wide. The pictures are very fine, and the collection of objects of art distributed throughout the house includes a large marble relief portrait of Garibaldi, erected since his visit to Stafford House. For a catalogue of the principal paintings we must refer our readers to Peter Cunningham's "Handbook of London."

SIR WILFRID LAWSON'S HOUSE.

At three p.m. the members walked across the Green Park, passing the colossal statue of the late Duke of Wellington (shored up pending its removal from London), thence to No. 1 Grosvenor-crescent, Belgrave-square, which they visited by permission of its owner, Sir Wilfrid Lawson, bart., M.P. This house was erected about the year 1827, from designs by Mr. George Basevi, who also designed the whole of Belgrave-square in 1825. The drawing-room, dining-room, and staircase of this house have been recently decorated by Mr. George Aitchison, A.R.A., architect, and were inspected by the visitors. The walls of the drawing-room are covered with a rich golden silk, and in the centre of the ceiling is a very large centre flower, gilded to correspond with the walls. The ornamental balusters to the staircase are silvered, and present a somewhat subdued appearance.

LORD LECONFIELD'S HOUSE.

The members and visitors were received here at four p.m. by Mr. George Aitchison, A.R.A., under whose superintendence the house is being completed and decorated. The house is situate at No. 9, Chesterfield Gardens, Mayfair, and was originally designed by Mr. Salvin, and erected in 1877 under the superintendence of Mr. T. H. Wyatt. Mr. Aitchison explained to the visitors what is being done.

MR. J. STEUART HODGSON'S HOUSE.

Mr. G. Aitchison next conducted the visitors to this house, No. 1, South Audley-street, where some beautiful wainscoting and other carved oak work, designed by himself, has been completed. This house was erected from designs by the late Mr. F. P. Cockerell, architect.

CONVERSAZIONE AT THE SOUTH KENSINGTON MUSEUM.

Thursday's proceedings were brought to a close by a *conversazione* of the members and guests held by permission of the Lords of the Committee of Council on Education at the South Kensington Museum.

The President (Mr. Ewan Christian) and Council received the members and guests at nine p.m., and the company, which included a great number of ladies, promenaded the different courts and art galleries till midnight, inspecting the various objects of art and antiquity exhibited there.

During the evening a programme of music was performed by the band of the Royal Engineers, under the direction of Herr J. R. Sawerthal, Bandmaster, R.E.

VISIT TO MESSRS. W. CUBITT'S WORKSHOPS.

On Friday, May 9th, at three p.m. a visit was made to the workshops of the well-known firm of Messrs. William Cubitt & Co., 258, Gray's Inn-road, by permission of the firm. The visitors were received by Mr. Kean, engineer to the firm; Mr. Paul, chief of the carpenters' and joiners' department; Mr. Smith, foreman of masons; and Mr. Baldwin, foreman of plasterers, who severally conducted them through their separate departments, commencing with the carpenters' and joiners' workshops. Here much interest was evinced in the various kinds of joinery work which was in progress. The museum of specimen woods was next inspected. Here are hung polished specimens of many beautiful English and foreign woods, including rare samples from America and Australia. Returning to the joiners' department, the machinery, which was in fu operation, was inspected, an ingenious machine for cutting flutes, circular mouldings, and other details used in Gothic and Renaissance work attracting much attention. All the tools used are of the best solid steel. We understand the name of this machine to be "Thompson's Universal Joiner." The parquetry work and the polishing operations were next inspected. The machine for moulding circular work was shown in operation, pieces for circular architraves or archivolts being quickly moulded on the edges by pressing the wood round on a flat table against the cutter. The turning-room was next entered, where spiral or twisted balusters and newels were being turned on the lathes. The dowelled doors, as made for the Peabody dwellings by this firm, also attracted notice, the holes being drilled in the framing, and oak dowels inserted as a fixing instead of tenons, thus pinning the frame together. A method of laying floors without the nails being visible, and a band-saw by which patterns in fret-work can be cut in any direction, were also noticed. The smith's shop was next visited, and here "shearing" and "punching" are done by the same machine. The marble and stonework shops were next inspected. Here are to be seen large rubbing-tables, for producing plane surfaces on stone, and also moulding, turning, and polishing machines. The engineers' and ironfounders' workshops, and the wrought-iron shops, where the hammered work is done, were next inspected, and much interest was manifested when the show-room was reached, showing the results of the labour performed in these shops, in the form of stoves, ranges, hot-water fittings, &c. The firm manufacture their own bricks, tiles, cement, and terra-cotta. In the manufacture of terra-cotta broken glass and crockery are used, by being pulverised beneath powerful grinding-wheels. The modelling and show rooms attached to this department exhibit specimens of the potters' and decorators' art. At the conclusion of the visit a vote of thanks, proposed by Mr. Cole A. Adams, was unanimously accorded to the firm, and to the heads of departments, for the kindness and courtesy that had been shown to the visitors.*

* A more detailed description of the works of this celebrated firm was given in the *Builder* more than eight years ago, on the occasion of a visit by the members of the Architectural Association (See *Builder* for March 4, 1876).

INTERNATIONAL HEALTH EXHIBITION

Supplements to The Builder.

No. 1. MAY 17, 1884.

ON another page we have given our general impressions of the International Health Exhibition, its scope and probable results; and we here commence our detailed notices of its contents. We noticed at some length last week (p. 636, *ante*) the exhibit which is being made by the London water companies; and a fortnight ago (p. 601) we gave some particulars of the street of old houses, two sketches of which we publish this week.

HOUSE DRAINS: THEIR CONSTRUCTION AND VENTILATION.

CLASS XXII. of Group 3, The Dwelling House, is occupied by materials and appliances for house drains, their construction and ventilation, including sewer disconnexion, sinks, traps, gullies, and the disposal of house refuse. The exhibits under this head are to be found for the most part in the South Annexe, parallel with and to the north of the western end of the great South Gallery, although some exhibits properly belonging to this class will be found among the sanitary fittings in Class XXIII., for which the Eastern Annexe is set apart, and which we propose to notice next week, together with any stray exhibits belonging to Class XXII. which are not here noticed. In Class XXII., as in many other classes, many exhibitors have not yet occupied the space assigned to them, or have not arranged their goods. However, we proceed to notice, as far as may be, the exhibits in the South Annexe.

Mr. John Waldram, C.E. (Stand 465), exhibits a curiosity in the shape of what is described as "a length of oaken drain-pipe," said to be more than one hundred years old, and which was found on the site of Hatchett's Hotel, Piccadilly. The bore of this is 3 in. or 3½ in., and approaches an oval in section. It is described as a "drain"-pipe, but we presume that it could never have been used except for the conveyance of water.

At the next stand, 466, Dr. R. W. Leftwich, of Kennington-road, exhibits the model of a portable ventilating shaft for temporarily fixing over street sewer manholes or side entrances when necessary. The portable shaft is provided with a chamber to contain disinfecting fluid, which can be discharged into the permanent shaft or manhole as may be required.

At Stand 467, Mr. Samuel C. Dean, of Fulham, shows one or two appliances which merit the attention of visitors. One of these is called the "Parcœan" ventilator and sewer-air cremator. Shortly stated, it consists of a chamber filled with asbestos kept in an incandescent state by a gas-flame, which draws the foul air to it and purifies it. This appliance can be used in connexion with the extraction shafts of hospitals for infectious diseases, as well as for the ventilation of sewers; in the latter case, a gauze division is inserted to prevent the back-draught of flame, so as to obviate possible danger in the event of an escape of illuminating gas from the street mains getting into the sewer. Another exhibit shown by Mr. Dean is the "Pactolean" aërating filter, which the inventor puts forward as a means of cleansing and oxygenating the effluent waters from sewage works,—the filtering material used—charcoal—being capable of revivification without removal, simply by allowing all the water in the tank to flow away, and then pumping streams of air through the filtering medium from the perforated pipes which are imbedded in it.

Mr. Henry Masters, architect, of Bristol, is mentioned in the catalogue as exhibiting, at Stand No. 468, a drawing showing the application of the double-check system of house drainage, together with various fittings used in the application of that system; but up to Wednesday afternoon they were not in place.

At Stand 469, Messrs. Henry Bailey & Co., of Fulham, have a good display of sanitary pottery and stoneware, including the "Desideratum" stable, gully, and grease-trap, which is well worthy of attention, being compact and simple in arrangement, easily get-at-able, affording ready means for intercepting matters that should not be allowed to pass into the drain, and facilitating the ventilation and disconnexion of the drains. Banner's patent drain-trap is shown at this stand, together with Roberts's patent water-tight joints for drains, which are no doubt capable of producing very good results. The joint is constructed on the principle of the wedge. The collar, which is lined with an amalgam, is passed over the abutting ends of the two pipes required to be connected, these ends being also loaded with amalgam, and having their surface moulded in a reverse direction to that of the interior of the collar. The pipes are, of course, made of uniform diameter inside and out from end to end, the sockets being omitted.

Mr. Charles Hawksley, C.E., of Great George-street, exhibits, at Stand 470, some drain-pipes of stoneware and cast-iron joined together to represent a house-drain, and terminating in a vertical length of lead soil-pipe. To this system of pipes it is intended to attach a plumber's force-pump and two 6 in. gas-pressure gauges, so as to exhibit a method of testing the soundness of house-drains whilst in their usual working condition. The test is to be applied in this way: Air is to be introduced at a slight pressure (the catalogue says a pressure equal to a vertical column of water about 2 in. in height); if the air escapes we presume that the test will be taken to indicate that the drains or soil-pipes (or both) are inefficiently jointed, connected, or trapped. The arrangement was not in working order at the time of our visit.

At Stand 471, Messrs. R. Houghton & Co., of Chelsea, show their improved gullies for bath and sink-wastes and surface drains. Of these gullies we have spoken favourably on a previous occasion. Some specimens of bad plumbing,—bad, some of it, both as to the workmanship and as to the principles involved,—are shown at this stand. The section of a lead D-trap which has been in use shows at a glance how justly these traps have been condemned as being "traps of deposit."

Messrs. J. J. Ellis & Co., of the Ellistown Collieries and Fire-clay Works, near Leicester, have on view at their stand (472) some sanitary stoneware of exceedingly good quality as to material, all the pieces that we examined being characterised by truth of shape.

Major Noott, of Rookwood, Parkhurst, Isle of Wight, shows on Stand No. 473 lengths of his patent drain-pipes, which, instead of having the socket at one end and the spigot at the other, are provided with a half-socket at each end, the one end having the half-socket on the lower half of the pipe, and the other end having the half-socket on the upper half of the pipe. By this means it is claimed that it is possible for a workman laying a drain to make joints which shall approach much nearer to perfection than those made when the ordinary pipes are used.

At Stand 474 Messrs. John Watts & Co., of Bristol, show their patent "asphyxiator," as used for applying the smoke-test for proving the soundness of house drains. Sulphur or smoke-paper being placed in the combustion chamber and ignited, the rotation of the fan forces the fumes through the drains. All outlets and ventilating pipes being closed during the test, the fumes will find their way through defective joints and imperfectly-sealed traps, and so reveal the point or points at which sewer-gas passes from the drain into the house.

Mr. W. Batten, C.E. (Stand 475), of Lozell's-road, Birmingham, shows his patent ventilating manhole covers for sewers, with dirt-boxes, &c. Also, a sewer ventilator with flushing-box, dirt-box, and lamphole-cover combined. These covers have been noticed by us on previous occasions, and they have been largely used in several important towns.

At Stand 476, Messrs. James Stiff and Sons, of the London Pottery, Lambeth, have a fairly representative collection of useful appliances in sanitary stoneware. Besides drain-pipes, bends, and junctions, they exhibit some good traps, including the "Interceptor" sewer-gas-excluding trap, Weatherley's "Disconnector" waste-water trap, Dr. Soper's drain disinfector,—very useful for hospitals and institutions, and even for private houses. Most of these appliances have been described by us on previous occasions, but possibly some visitors to the Exhibition will see them for the first time. A rain-water pipe inspection trap, housemaids' and hospital sinks, and other items for kindred purposes, will be found on this stand.

The Patent Victoria Stone Company (Stand 477) make a good show of their speciality in the form of sinks, paving, &c. Many of the specimens are shown worked in section, so as to exhibit the nature of the material.

Stand 478 is occupied by Messrs. Frederick Bird & Co., of Great Castle-street, Regent-street, with a collection of sanitary ironwork, mainly for use in connection with sewers. Their exhibits include charcoal ventilators, flushing-valves, tide-flaps, penstocks, &c.

The Birmingham Sanitary Association show, at Stand 479, Potts's Patent "Edinburgh" air-chambered sewer-trap, which has now been in use for some years. It affords means for the total disconnexion of house-drains from the main sewer, and for the admission of fresh air to the former.

Mr. John Hewes, of Leicester, exhibits at Stand 480 his proposed patent apparatus for the utilisation of sewage and other house refuse by converting it into gas. The gas so produced is not intended for use for illuminating purposes, but its calorific value is said to be such as to make it a valuable fuel. The apparatus was not shown at work at the time of our visit, but from what we were told it seems to give promise of much usefulness. In starting the apparatus it is necessary to use coal and other fuel for the fire, but when once started some of the gas which it makes is used to keep it going.

Stand 481 is occupied by Mr. T. Harnett Harrison, C.E., of Liverpool, who shows a basket sewage-strainer and a new patent collar joint, which seems to give promise of affording a really reliable means of connexion between lead or iron pipes and earthenware fittings. The difficulty of making permanent and reliable connexions between these differing materials has long been experienced, and plumbers and builders will be interested in inspecting this method of joint-making.

Mr. Henry Dean, of Wolstanton, Stoke-on-Trent, shows, at Stand 482, some of his patent traps, which are very good and simple, affording means for instantaneously clearing out any deposit that may accumulate.

Stand 483 is, according to the Catalogue, occupied by Mr. Joseph Parrott, of Wallington, with "a self-acting valve applicable to any form of water-closet apparatus, sink, or bath-pipe, for preventing the admission of sewer-gas." At the time of our visit this was not to be seen.

Between Stands 483 and 484, but not mentioned in the catalogue, Mr. J. W. Cockrill,

Borough Surveyor of Great Yarmouth, exhibits a model of a portable flushing tank used for flushing sewers; also some pipe-sewer junction-blocks, likely to afford great convenience in forming connexions between pipe-sewers. As Mr. Cockrill points out, much difficulty is experienced in making proper connexions with pipe-sewers. If the pipes are removed to insert junctions, the joints are disturbed, and it is nearly impossible, irrespective of cost, to make the sewer good in a proper manner; while if an ordinary pipe is cut into the sewer it is very difficult to insure a proper joint being made. In Mr. Cockrill's experience, seven stoppages out of the ten of both sewer and lateral drains have been caused by the careless manner in which this work has been done. The use of these junction-blocks compels the lateral drain being connected at a proper angle with the sewer, and a perfectly tight joint can be made round the collar. It also prevents any projection inside the sewer. Regulations have been made by the Great Yarmouth Urban Sanitary Authority compelling the use of these junction-blocks on pipe sewers of 12 in. diameter and upwards.

At Stand 484 Mr. R. R. McKee, of Kirkcaldy, shows a patent drain-flushing apparatus, the principle of which is different from that of other flushing-tanks we have seen. In McKee's apparatus the contents of the tank are not discharged by a siphon, but by a valve automatically opened, partly by the rising of a float on the surface of the water, and partly by the admission of the water to a piston, to the rod of which the outlet valve is connected. This apparatus is shown in action, and will well repay examination.

The London Sanitary Protection Association (Adam-street, Adelphi) are mentioned in the catalogue as the occupiers of Stand 485, which, however, was vacant at the time of our visit.

Mr. John C. Bothams, M.Inst.C.E., City Engineer of Salisbury, exhibits (Stand 487) a model of his improved chimney-top, which is constructed of louvre bricks. The top is made to receive several flues, and it is claimed for it that its arrangement is such as to secure a powerful up-draught, while ensuring uniformity, or rather preventing deformity, of appearance.

Mr. Hugh S. Cregeen, Surveyor to the Bromley Local Board, shows (Stand 488) a patent air-inlet head for the ventilation of house drains.

Some sectional drawings of a plan for improving the ventilation of house drains and sewers by means of the street lamp-posts and by vertical tubes running up the fronts of the houses, are shown by Mr. C. M. Elstob, of Cheapside, at Stand 489. There does not appear to be anything new in these proposals, against which serious objections have been urged.

At Stand 490, Mr. Edmund Page, of Forest Gate, shows an improved grease interceptor and a gully trap for kitchen sinks.

Stanford's patent joint for drain-pipes is shown at Stand 491, by Mr. Henry Ough, of Austin Friars. From specimens which have been in actual use, it appears to form a reliable joint, one of its great merits being the ease with which the pipes can be properly connected.

Stand 492 is occupied by Messrs. George Waller & Co., of Holland-street, Southwark, who exhibit flushing penstocks, manhole covers, tide-flaps, and a complete set of drain and gully-cleaning tools. Their new patent side-entrance and manhole-cover is specially worth the attention of visitors practically interested in such details. This cover is so arranged that it can at pleasure be used as a ventilator, or closed, but in either case it is level or flush with the pavement, and is neither obstructive nor dangerous to wayfarers. With the side entrance cover with safety-grating at present in use, when the door is opened a grating rises to the level of the path for people to walk over, but the door stands up like the lid of an open box —a very inconvenient and even dangerous arrangement in crowded thoroughfares. In Messrs. Waller's new patent cover the door is made with slot openings so as to form a close door. When men are at work in the sewer below,—or if it is required at any time, irrespective of the presence of men at work below, to be used as a ventilator,—the slotted grating, which is hinged on to the door, is unfastened and allowed to hang down. The upper door, or grating, being then shut, free ventilation is afforded, while allowing people to walk over it in safety.

The North British Plumbing Company (Stand 493), show iron soil and drain-pipes, the use of which, owing to the comparative fewness of the joints (which are made with lead), the strength of the material, and its comparative non-liability to fracture, seems to be extending. An air-chamber and cover, affording ready means of clearing the pipes, is shown by the same exhibitors.

At Stand 494, Mr. Donald Nicoll, of Buckingham-street, Strand, shows models of apparatus adapted for the interception, disposal, and utilisation of refuse in connexion with street subways. In a pamphlet entitled "Cloacina," to be had at the Stand, and also on some handbills or "tracts," Mr. Nicoll shows how much room there is for improvement in these matters. Model No. 1 is a dustbin, with wire baskets attached, the latter to contain dry household waste, for which there is a ready sale, if separated from ashes. It will be observed that this bin can be removed by a pole and slings (also exhibited), and its contents emptied into ordinary dust-carts, or the contents may be shot into a sewage-tank (Model No. 4). The dust-bin can be made instantaneously air-tight, and can at once replace the unwholesome dust-bins now in use. Model No. 2 shows a garbage-bin, intended to contain household offal of a decomposing nature, such as the entrails of fish, fowl, or game, also vegetable and all other kinds of household refuse; the garbage-bin contains a deodorizing sifter, which on being rapidly moved on the sliding rods to which it is attached, distributes over each deposit of garbage a needful quantity of deodorizing substance. This bin can also be kept air-tight, and removed like Model No. 1. Model No. 3 affords an approximate representation of subways proposed to extend beneath pavements, or footpaths; the earth is supposed to be removed, and a breach made in the bricked subway showing the interior. It is suggested that the walls of the subway should be covered with a vitrified surface, in order to assist in the insulation of telegraph and telephone wires. The several services of water and gas are shown, capable of being turned on and off as may be required by the occupants of dwellings. As the walls of the subway will be necessarily low beneath the surface in order to intercept sewage, it is urged that a very large number of telegraph and telephone wires can be placed at the service of the public. Model No. 4 shows a tank placed to receive sewage discharged from houses by the usual trapped drain pipes. Within this tank there are two compartments, formed by galvanised iron network, one compartment being charged with crushed flint (alone or in combination with lime, &c.), and the other compartment with animal and vegetable charcoal (alone or in combination). The sewage having descended into the tank, the water conveying the same will then filter through the said compartments, and finally pass to the street sewer or drain. When required for works on a large scale, a perforated inner tank can be used in place of the screened compartments before described. In all cases it is proposed to divert the waste water of cisterns, sinks, baths, rainfall, &c., in order to avoid passing through the sewage tank.

Another exhibit apparently somewhat in the same direction, if we may judge from the description in the catalogue, was to be shown at Stand 495, by Messrs. Lewis Olrick & Co., but up to Wednesday afternoon last it had not made its appearance.

At Stand 496, Mr. H. King, builder, of High-street, Kensington, exhibits models and plans which show him to be actuated by a laudable desire to apply correct principles of sanitation to the houses which he may be called upon to build or remodel. Although the section which he exhibits is apparently not drawn to scale, so far as we can judge from a cursory inspection of it Mr. King seems fully to understand what means to take in order to keep a house free from sewer air. There is nothing new in his proposals, which involve the use of several well-known appliances for disconnecting the house-drains from direct communication with the sewer. But Mr. King, with the view of showing how the sanitary arrangements of a house should *not* be carried out (unless it be the object of the builder and plumber to lay on the sewer-air direct to the rooms, and even to the cistern, of a house), exhibits a companion section, which, to the initiated, contrasts strongly with the one showing the right method of doing the work. Mr. King's name and address are as prominently given on the one as on the other, and those who do not stop to examine them and to read the explanatory writing on the sections may be apt to conclude that Mr. King is open to undertake work according to either plan. To avoid this impression, Mr. King should label his "frightful example" with some such motto as "How *not* to do it."

Stand 497 is occupied by Messrs. Candy & Co., of Chudleigh, with a variety of sanitary stoneware and pottery, good of their kind, but calling for no special remark. A speciality worth the attention of visitors to this stand is the new paving brick, named the "granite vitrified," which seems to possess many of the good qualities of the blue Staffordshire brick, while, at the same time, it is of a more pleasing colour.

Stands 498 and 499 were not, at the time of our visit, occupied by the exhibitors to whom they are assigned by the catalogue.

At Stand 500, Messrs. Henry Wadsworth & Son, of Halifax, show their patent wheels and axles, the only right which they have to a place in this section of the Exhibition consisting in the fact that they are applied to the "Wadsworth" patent tipping waggons and carts for the removal and discharge of house and street refuse,—these being shown by models. The patent wheels seem to embody improvements of marked value.

Stand 501 is occupied by the Imperial Stone Company, who exhibit their material as applied to the construction of pipe-sewers of large diameter. Shone's ejector and other specialities are shown at this stand, the visitor to which should inspect the material called "Petro-silicon," which forms an excellent and durable pavement for basement floors, stables, laundries, &c.

Messrs. Banner Bros. & Co., of Billiter-square, are the tenants of Stand 502, and they show their well-known appliances for house sanitation, which have been largely used and appreciated. A speciality at this stand is Banner's Patent Hollow Kerb, for use in town streets. The interior of the kerb, which is made of artificial stone by Messrs. W. B. Wilkinson & Co., of Newcastle-on-Tyne, is provided with two hollow channels running parallel with each other, and readily accessible by the removal of lifting-pieces at intervals. In these days of the extended and extending use of telegraphy and telephony, this invention of Messrs. Banner ought to find favour, for while overhead wires are thought to be dangerous (as they certainly are unsightly), the continual pulling-up of the street pavements in crowded thoroughfares to relay or repair telegraph wires is a source of great expense and inconvenience.

Messrs. Broad & Co. (Stand 503), of Paddington, exhibit a very good collection of sanitary pottery and appliances for the trapping and ventilation of drains. Their improved inspection gully, in white enamel stoneware, is a very good thing, and is well adapted for use as a grease trap. Field's channel syphon, and Broad & Co.'s improved reducing channel syphon, for accelerating the flush of drains with a minimum flow, are among the other things shown at the stand. At the adjoining stand the Bourtreehill Colliery Co. (for whom Messrs. Broad & Co. are agents) exhibit their excellent white-enamelled fire-clay sinks, cisterns, troughs, &c., of which we spoke in connexion with a former exhibition.

We have now dealt with the whole of the exhibits in the South Annexe up to the time we visited it, and next week, as before stated, we propose to notice the sanitary fittings in Class XXIII. But before closing this week's notice we step across to the East Annexe to look at the very complete and instructive series of models and plans which are exhibited by the Manchester Corporation, and which, although placed in Class XXIII., have much in common with the exhibits which are in the South Annexe. These models and plans serve to show the entire method adopted by the Manchester Health Committee in disposing of the refuse of the city. First in order is shown a model of the Manchester cinder sifting or pail closet, constructed of the full size of the closets usually erected in connection with dwelling-houses in the city. The pail under the seat is sufficiently large for the use of a family of six persons. The cinder sifter is placed on one side of the closet, and is intended to screen the ashes from the cinders of an ordinary fire, which, when taken from the fireplace are put into the opening at the top. The fine ashes falling through the perforated screen are conducted by a shoot

into the pail, where they deodorise the fœces already there, whilst the cinders fall to the bottom, whence they are removed by a small door, and may be again used as fuel. In the recess behind the closet is a dust box or bin into which can be thrown, either through the opening at the side or the double doors at the back, all the refuse from the house. At the back of the closet one of the doors swinging from the top opens inside, and is used by the occupants of the house to which it belongs, the bottom door of the pair slides upwards like a railway-carriage window, and is there fixed, whilst the men whose duty it is to seal the pail hermetically by fastening upon it the cover, remove it, and put a clean one in its place, when the door is again lowered. Next is seen a model of the Manchester commode for use in a sick room or other place in which it is not convenient to erect an ordinary closet. It is lent temporarily for emergencies, where numbers of people are expected to congregate, as at exhibitions or congresses, the Corporation taking charge of the commodes during the time they remain. The pail and cover are made of steel, with solid top and bottom rings, and galvanized. They each hold ten gallons, and with slight repairs will last about ten years. The top and bottom hoops, the handles, and the lugs whereon the lid is fastened, are used up again. The cover is made of iron, with a steel spring and a flanged tubular indiarubber ring on the under side, so that when the lid is pressed by the spring on to the top of the pail the latter is hermetically sealed by the tube. A model of the Manchester collecting van is exhibited, made one quarter the full size. This is used for collecting the pails and domestic refuse. The four compartments receive twenty-four pails, and the space at the back will contain the refuse from twenty-four houses. The van makes twenty-eight journeys per week, carrying from the depôt twenty-four clean and empty pails each journey, and bringing back again the full ones. Two men accompany each van, and they travel about sixteen miles per diem. The van is drawn by a single horse. There are also shown models of boilers used in the sanitary works, specially constructed for generating steam by the consumption of the house refuse named. The furnaces are large, and the heating surface great, there being inside the boiler thirty-three conical tubes and four pockets. About ten tons of refuse is consumed in twenty-four hours. There are also shown models of apparatus for manufacturing fœces and garbage into concentrated manure; and of apparatus for converting house refuse into bricks (this group representing machinery which will convert about twelve tons of house refuse into 4,000 to 5,000 bricks); samples of sanitary soap, oil, candles, and concentrated manure manufactured from dead cats, dogs, and fish, slaughter-house refuse, and animal matter; together with plans and sections of the sanitary works themselves, which are situate at Holt Town.

THE HOUSING OF THE POOR.

THE works exhibited in Class XXXII. of Group 3 comprise publications and models, diagrams, &c., relating largely to the means of housing of the poor. On the whole the exhibits show no great advance upon those which have gone before, and this is more surprising and disappointing considering the attention which has been called to the subject, not only by those who were in a position to offer advice and sympathy only, but also by those who were in a position to give material help by means of their social influence, and the still more valuable and irresistible strength of money. The "bitter cry" has penetrated far and wide, but the echo has been lost amid the chaos that seems to prevail in quarters where the most substantial aid should be looked for. There is no disguising the fact that the main question of housing the poor has yet to be faced; to shelter the well-to-do artisan is not a difficult matter, as he can afford to pay for the accommodation, and accordingly his wants are immediately supplied,—in fact, much in danger of being over-supplied, as the inexorable law of demand and supply in these go-ahead times soon makes its position clear. Like all other great social questions, it cannot be settled off-hand, and there is no doubt that time must be the factor by which to measure the result, and that result is yet far off. Notwithstanding the efforts that have been made by philanthropists, whose endeavours in this direction have, from causes perhaps beyond their own control, been diverted from the main point at issue, the matter of pounds, shillings, and pence still manifestly holds considerable sway over the condition of those who never own the pounds, but have great difficulty in obtaining the shillings and pence. Land in London, even in the vilest quarters, has a speculative value, in addition to its intrinsic worth, that, unless it can be acquired at the latter quotation, leaves but a poor chance for those whose only speculation is as to where they will be able to earn their weekly rent. Thus it is that the very poor find themselves constantly driven from their homes, such as they are, to make way for "model dwellings" which are infinitely beyond their means or ambition. Some of these buildings, where the site has been acquired at a reasonable price, and judgment shown in the building, are able to pay 10 per cent. upon the outlay, to the benefit of whom? Certainly not the class who most require it; and not until the same buildings return only say one-third of that amount shall we be nearer the solution of the question. But we must take the question as we find it, and be thankful to those who are doing their best to bring about so desirable a result; and that there are many earnest workers continuing in the field the present Exhibition will testify.

Foremost amongst the examples shown are those of Mr. Edward Clarke, who has had great opportunities and experience, and has turned them to good account; and the numerous sites, apparently of an awkward nature, with which he has had to deal are treated in a manner which shows a good grasp of the subject. The rooms are well lighted, but if anything too large—at least too large from the speculative builder's view, where, with land at so much per foot, they can hardly afford to throw in a few extra feet. There is very little waste in passages or angles, a fault very noticeable in the earlier attempts of the pioneers of this movement. The illustrations show variously three, four, five, and six stories above the ground-floor, and in some cases the ridge is finished with an iron cresting. This is rarely necessary, and adds to the cost without any corresponding advantage. There is one peculiarity in the plan which, perhaps, in practical working would not be any disadvantage—that is, the separation of the living-rooms from the bedrooms by a corridor upon which they all open. Thus we have four living-rooms side by side, with the bedrooms opposite. There is a hopeless confusion as regards the numerical order of the exhibitors in this class; in fact, the distinguishing numbers are altogether absent, so we must take the plans as they present themselves; and the next of importance that we come to are those of Mr. Clement Dunscombe, the City Engineer of Liverpool. Here is a very large site to deal with, and only a small proportion is covered, leaving a large quadrangle in the centre, which doubtless forms a very useful playground, as well as preserving a large open space, which Liverpool certainly requires as much as more favoured cities. The question of light here is unrestricted, as has been apparently the question of cost, for the excellent contract and working drawings show a determination to have everything of the best, and plenty of it. The living-room fireplaces show a hot-air flue and exit, an oven, and, in fact, a small kitchener complete. The exterior shows a rather elaborate treatment, with shops on the ground-floor—upright lines finished with brick pediments, filled with the usual carving. Whether the Liverpool artisans and labourers earn sufficient to pay for such luxuries is a question for themselves to answer.

Mr. Jas. Webster shows a very small but sensible treatment of an awkward site: it consists of two sets of two rooms on each of three floors. Externally it has a simple elevation, with a little awkwardness about the gable, but it contains more character than many more ambitious attempts, and is more nearly allied to the class of work which pays its way.

Some old friends re-appear in the perspective drawings of the houses on the "Artizans', Labourers', and General Dwellings Estate," Hornsey, by Mr. Rowland Plumbe. We are not treated to the plans, but as these are only two storied dwellings with pleasing appearance, we take it for granted that there is not much room to go wrong, and, indeed, from such a quarter we do not expect that it should be so. If the agitation on the Northern Railway lines for third class season-tickets should have any good result these attractive houses should further advance in favour, as there is a very homelike and independent air about them.

Mr. Joseph Wall shows a simple rectangular plan apparently free from difficulties as to light and surrounding owners. He is the only exhibitor who gives a detailed cost of the transaction from first to last, giving the price of the land at £7,000 per acre, and the average rent of each room at two shillings per week. He shows a return of 5¼ per cent. on the outlay. Although the aggregate cost of the block is given, the price per room or the price per cubic foot is not stated. This would have enabled one to arrive at a more reliable estimate, as all the outgoings and similar details are fairly stated. There is a note on the drawing to the effect that buildings of three or four stories can be built more cheaply than those of a loftier structure. But this depends entirely upon the price of the ground or the amount at which the ground rent is fixed; for if, as is usually the case, the buildings are erected on valuable ground, it is the upper floors that show the profit and help to redeem the cost of the lower ones.

The Improved Industrial Dwellings Company send some very poor drawings of the buildings on their Edgware-road estate—the usual rectangular plan in parallel blocks; and, having plenty of space to deal with, no ingenuity has been required to meet the difficulties which often give rise to a good plan. The elevations are commonplace, but look better in the photographs of similar work. An interesting map is also shown, with red discs placed so as to show the vast operations of this great company. No site seems too large for them, and none too small, for we find at Mile End they cover nine acres of land and house 1,045 families, and at Pentonville a small block shelters only twenty families. These drawings submitted form a useful study, as there is considerable variety in the design, although it is not of a high class; and those who are interested in the question may see the various points contrasted in a way that offers useful suggestions. This company claims to have housed twenty-five thousand people in 16,766 rooms, at a cost of £950,000, making an average of £38 for each person and a cost of about £50 per room. This, we suppose, is exclusive of cost of site, and their experience must have led them in more economical ways of late, as these figures compare very favourably with the earlier results. Some interesting photographs show the rookeries which have been demolished to make way for the various new buildings, and, to judge from the squalid surroundings and miserable tenements, these sites should have been acquired at very reasonable figures. The plans of the buildings on the Soho estate for the same company show the old tendency to cutting off corners and forming inconvenient angles. Not that such in itself is awkward in actual use, but it makes more difference in the cost of building than is generally supposed, and individuals building for themselves with a view to letting or selling such property always pay considerable attention to such apparently small points. The National Dwellings Society show a straightforward plan with only one scullery to eight rooms. This, if used for the purpose which the name indicates, would lead to much disagreement; but as in reality the tenants are accustomed to wash anything anywhere it would be more likely to become a general laundry, and the domestic arrangements of the scullery would be confined to their own rooms. A very ambitious work is shown by the Lambeth Dwellings Company, designed by Mr. E. Hoole, who has said and written a good deal upon the subject lately. The plan is simple, with a long gallery at the back; the closets are all together, twelve of them leading off each landing, forming a latrine which is treated externally as a separate feature, with crow-stepped gable, pointed arches, and long louvres. This may be useful as regards its sanitation, but we think can scarcely be pleasant in actual working. The elevation generally is very elaborate, with shops on the ground floor facing the main street; a mezzanine floor and pointed arches generally to the bays, with a very solid-looking corner tower with a high roof, and in this case, unless the shops and lower floors pay for the upper ones, we are at a loss to know how the returns can meet the expense of building. The Society for Improving the Condition of the Labouring Classes seems to require waking up; they send

no plans except for a few small, old-fashioned cottages and small buildings, but yet there are large coloured drawings of good-sized blocks which certainly bear away the palm for ugliness, for here we have realism and cheapness in bricks and mortar carried to the verge of exasperation. Some plans and details of hollow walls, chimnies, windows, &c., for dwellings carried out for the Prince Consort, and exhibited at the Great Exhibition in Hyde Park of 1851 are also shown, and as far as we can judge little progress has been made with them since. If this company has anything better and newer to show, it would be well for them to do so, as these are by no means representative. Far away in the Central Gallery, amidst the fitted apartments, are two isolated examples, one being a large block for for the Metropolitan Railway, proposed to be built in the Minories in substitution of the dwellings demolished by the construction of Tower Hill Extension Railway. There is nothing uncommon in the plan. It has shops with elliptical heads on the ground-floor, is sensibly and simply treated, and likely to be useful in its way. Dr. Greene and Dr. Blyth exhibit plans and model of a single tenement arrangement, one of them being a room 20 ft. long, divided at night by folding screens into three divisions, the screens folding back against the walls when not in use. This has economy of space and material to recommend it, and would probably answer very well in practice.

Taking the exhibition of these works generally as represented here, we see no reason to conclude that much has been done except in the magnitude of the transactions, and it yet remains for private enterprise and competition to meet the requirements of the very poor, which perhaps may be done in some degree by altering and adapting existing buildings; but if we adopt a levelling up process, instead of a levelling down one, care must be taken not to aim too high and overshoot the mark.

FOOD AND ITS PREPARATION.

In attempting to write a connected description of that part of the Health Exhibition devoted to food (Group 1), one is met by the difficulty which is nearly always encountered in work of this kind. Exhibitions are generally disappointing to the specialist, and popular exhibitions must necessarily be so. The specialist wants concentration, the same detail repeated over and over again, in all its minute ramifications, until the subject is exhausted; whilst the general visitor asks for variety, and cares nothing for accuracy. As it is the general public that pay for shows of this nature, the specialist must be content to put up with what he can get in the way of scientific completeness, and learn to be thankful for small mercies in the way of accuracy.

It is with a feeling something very like despair that we approach the present section of our work. The subject is so vast, and some of its minor branches have been given such undue prominence by their exhibitors, whilst others of greater importance are barely represented, that it is difficult to know where to begin. For the present we purpose treating this branch of our subject in a general manner, reserving any detailed notices we may give until a future date.

By the official classification, which has been arranged by a special sub-committee, the food-group is divided into twelve classes. Two of these may be discarded at once, as the whole of the exhibits in them are relegated to other divisions. These are classes six and ten, consisting of cookery and literature respectively. The remaining classes are as follows:—

Class I. Unprepared animal and vegetable substances.

Class II. Prepared vegetable substances.

Class III. Prepared animal substances.

Class IV. Beverages of all kinds.

Class V. New varieties of food.

Class VII. Chemistry and physiology of food and drink.

Class VIII.—Diseases due to unwholesome and improper food.

Class IX.—Practical dietetics. Army and Navy rations, &c.

Class XI.—Apparatus and processes for conserving, storing, and distributing fresh foods of all kinds.

Class XII.—Machinery and appliances for preparation of articles in Group I.

The arrangement will be seen to be one of a very general nature. It is doubtless well designed for classifying exhibitors belonging to different branches of industry, but does not lend itself very readily to our present purpose of description. All these classes are placed in the South Gallery, which last year was devoted to the British deep sea fisheries. In Class XII., however, a large number of the exhibits are in the machinery-in-motion department, which is placed in the Western Gallery and Annexe, whilst the bakeries are situated in the East Corridor. It is Class I. that confronts the visitor as he passes down the few steps which lead from the entrance-hall to the South Gallery, and the first things to attract attention are models of the gigantic specimens of different vegetables exhibited by Sutton & Sons, of Reading. Monstrous as these appear, they are all exact reproductions, so far as dimensions are concerned, of actual specimens grown from the seeds of the exhibitors. There are French beans as big as cucumbers, cucumbers as large as pumpkins, whilst the pumpkins themselves are simply absurd in their overgrown proportions. It may be doubted whether these Brobdingnagian vegetables would possess a flavour equal to those of more ordinary size; and this part of the display may, perhaps, be looked on as perhaps rather curious than practically useful. James Carter & Co. have an instructive collection of some of the principal vegetable food-products of all countries. The seeds, which are their great feature, are well-arranged in different groups; comprising seeds used direct as food for man; seeds producing plants used as food for man; condiment seeds; oil-yielding seeds; seeds for bees; and seeds producing dress fabrics. The next attractive stand in this neighbourhood is that of Rowland Ward & Co., the well-known naturalists. This firm has in one case a very complete poultry-yard, the specimens being most excellently mounted and set up. Two enormous Aylesbury ducks would go well with some of Messrs. Sutton's gigantic vegetable specimens. A second case exhibited by the same firm is principally noticeable for a spirited representation of a cock fight, to which has been attached the expressive label "large sums changed hands." Taxidermy is well represented in this section of the Exhibition. Keilich & Son show some finely mounted heads of oxen. E. G. Meek has a case of stuffed water-fowl of the conventional type, and under a dome-topped glass shade a pair of the everlasting scarlet ibis which it seems to be the ambition of every suburban taxidermist to produce. R. B. Spalding has a natural group of a vixen and cubs, about the last things that would be likely to form human food, but to make up for this, Mr. Spalding shows alive some edible snails, which it is to be hoped taste nicer than they look. G. F. Butt has a big case, a stuffed prize heifer being shown in full, though the heads of a Devon and Scotch steer are far more attractive. Thomas E. Carwardine has a thoroughly useful collection. He shows the various flour and meal products which he manufactures and supplies direct to the public. Mr. Carwardine seems to have little faith in the London baker, and thinks the only chance the householder has of getting good bread is to make and bake at home; using, of course, his flour.

E. Goodwin has samples of Russian, French, Dutch, Australian, and American hops, together with several specimens of our own Kentish and Worcester hops of last year. An American 1883 sample is particularly noticeable for its large size and good colour. E. Webb & Sons, and J. C. Wheeler & Son, have two large and excellent collections of seeds, a specimen of beardless barley, by the former firm, and a bold sample of Italian rye-grass by the latter, being well worthy of attention.

Class II. comprises a vast array of material, but a good many of the exhibits are not of an interesting nature. Many firms appear to look on the exhibition as merely a means for obtaining a large, gratuitous advertisement. A notable instance of this is the big show-case of the large Reading biscuit-making firm. Why these people should be allowed to occupy so much room in the most important part of the exhibition it is difficult to imagine. Messrs. Huntley & Palmer might have made their display a very interesting one if they would have followed the example of Messrs. Barnett & Foster, the mineral-water makers, J. & J. Colman, the mustard makers, F. Allen & Sons, the confectioners, or any of the firms who have given practical illustrations of their process of manufacture. No charge is made for space in the exhibition, and it is to be hoped that some means may be taken in future years for preventing such an abuse of the conveniences offered. In this class a good many of the most important exhibitors have not yet completed their arrangements.

An interesting exhibit in this class is a model of a kiln of novel construction shown on the stand of Turner & Co., of Bethnal-green. Samples of maize, corn meal, hominy, malt-flour, and other products of the kiln are shown. Unfortunately, the exhibitors were unable to obtain the space required, so that the exhibit is not so complete as it was intended to be.

The Vegetarian Society are included in this class. They have a dining-room adjoining the Dairies, where meals of three courses are served for sixpence. Several firms exhibit gluten bread and other diabetic articles of diet—the stand of G. Van Abbott, who is well known in connection with such matters, being especially noticeable. The rest of the exhibits consist of samples of flour, meal, biscuits, cakes, tinned goods, pickles, sauces, jams, confectionery, and objects of a like nature.

In Class III. the Aylesbury Dairy Company show Koumis, made according to Dr. Jagielski's formulæ, and also by a method of their own. The same Company have a special milk food for infants, peptonised milk and "sparkling bland," which is a description of Koumis. They also prepare whey and buttermilk; the latter an article all but impossible to procure in London a short time ago. It is to be regretted that this influential corporation is not more fully represented.

The Condensed Milk Company of Ireland show samples of their produce, which, judging from the analyses submitted, is of a high quality. Salt forms a small but interesting feature in this class, the exhibit of Weston & Westall being, perhaps, the most noticeable; whilst Bumstead & Co. and Manger & Son exhibit table-salt, agricultural and various other kinds. Gridley & Co. exhibit raw isinglass, and Jubal Webb has a large and pungent collection of cheeses, hams, and other provisions. The rest of the exhibits are mainly composed of tinned meats, soups, and goods of this nature.

In Class IV. the most noticeable feature is the big tun of the Tottenham Lager Beer Brewery. Wines and spirits in bottles, and mineral waters of more or less well-known descriptions, complete the list. A novel feature is introduced by Christmas & Co., of Worplesdon, who make wine in England from foreign fruit, and adopt the Continental system of "disgorging" to eliminate the sediment from fermentation.

In Class V. Savory & Moore's exhibit is interesting. Squire & Sons' case is also worthy of notice, a very clear example of malt extract being shown. Barff & Wire exhibit a new stimulant called Kreochyle, which has been well spoken of lately as a food for invalids.

In Class VII. the leading feature is the interesting series of exhibits illustrating the Chemistry and Physiology of Food which has been brought from the Bethnal Green Museum, by order of the Science and Art Department South Kensington. Some of the models are not very artistic, and the whole collection has lost a good deal of its original gloss; but it affords a ready means by which people may readily acquire a good deal of information on a very important subject if they will take the trouble.

The exhibit of the Parkes Museum of Hygiene is not worthy of the important institution it represents. John Knight & Son's case, in which a specimen of oleo-margarine is shown, attracts a good deal of attention.

In the remaining classes there is little calling for notice. Maignen's excellent filter is exhibited, but requires no further explanation in this connexion. A saucepan with a perforated lid, closed at will by a slide, is a simple but useful contrivance, which will be a useful addition to the kitchen. George Kent has a stand described as containing sick-room requisites, but which is occupied principally by his well-known knife-cleaning machine. Many of the remaining exhibits are in the machinery-in-motion department, which will be treated of under another heading.

The dairies form a most important section of the Exhibition. These, and the almost equally important bakeries, we shall reserve for another occasion.

We propose to continue these Supplements from week to week as may be necessary.